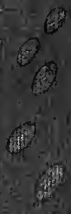
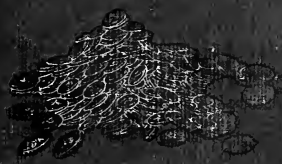


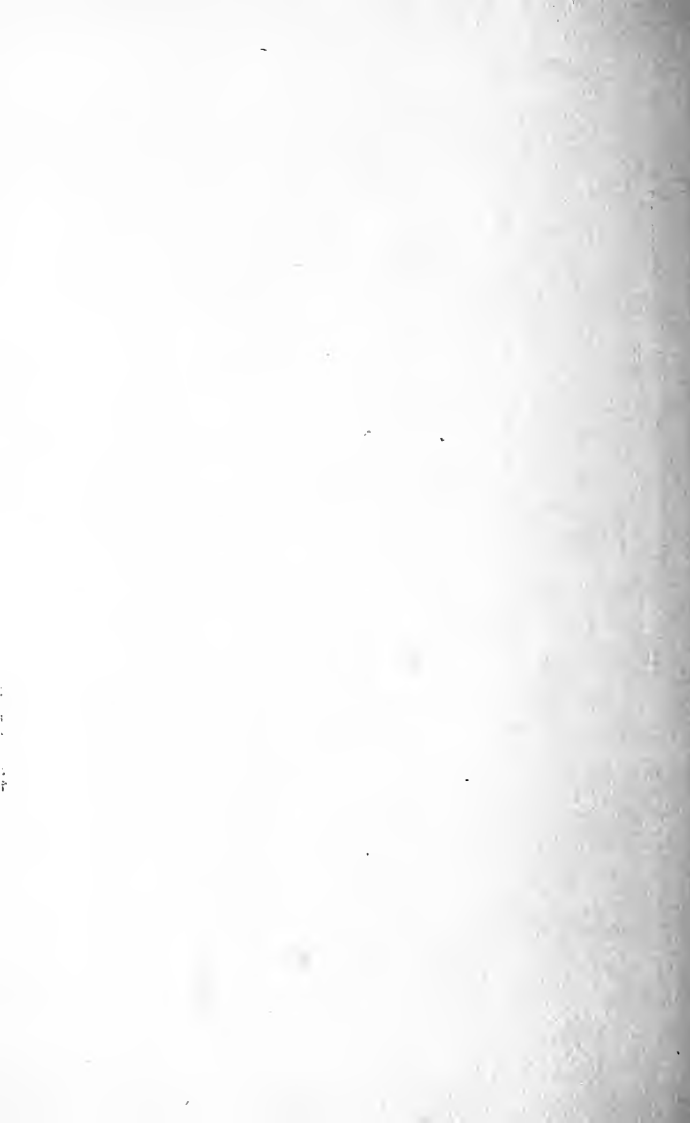
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ON

PATENTS





AMERICAN AND FOREIGN PATENTS



A Book of Information and Advice for Inventors

PUBLISHED AND COPYRIGHTED, 1905

BY

GEORGE S. VASHON & CO.

Attorneys at Law

Solicitors of United States and Foreign
Patents, Trade-Marks, Copyrights, etc.
Patent Practice Exclusively

WASHINGTON, D. C.

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Geo. S. Vashaw



PREFACE

DELAYS ARE DANGEROUS IN PATENT MATTERS.

In presenting this book to you, we believe it our duty to impress upon you the dangers incident to any delay, no matter of how short duration, in the filing of your application in the United States Patent Office. Many valuable inventions and their probable proceeds have been lost to their inventors by a delay in the filing of their applications, as such delays have permitted unscrupulous persons, who have gained a knowledge of such inventions, to procure patents and reap the benefits from inventions which do not belong to them. This delay has also permitted inventors, who conceived their inventions after the conception by the original inventors, to procure patents and thus probably defeat the issuance of patents to the original inventors. This subject is more fully explained on pages 24 and 25 relating to "Interferences."

INVENTIONS ARE GOOD INVESTMENTS.

We beg to direct your attention to the fact that no other class of investments offer like chances for profits as are offered by American and Foreign patents procured upon inventions of merit. It cannot be said of any invention that it does not possess merit, as it has been our experience that most, if not all inventors who have protected their inventions by patents, have profited by their investments.

OBJECT OF THIS PUBLICATION.

The object of this publication is to fully instruct you how to get a patent upon your invention in our country and all foreign countries, as letters written in the ordinary course of business, in reply to inquiries, are necessarily too brief to give the information you should have before filing your application. A further object is to impress upon you the importance of properly protecting your invention, that is, your patent should issue upon claims which will protect your invention, and not upon claims which will permit a slight change in the invention to evade the patent. An invention which is properly protected will permit you to sue and procure damages from any person who manufactures your invention or device substantially the same.

SELECTING AN ATTORNEY.

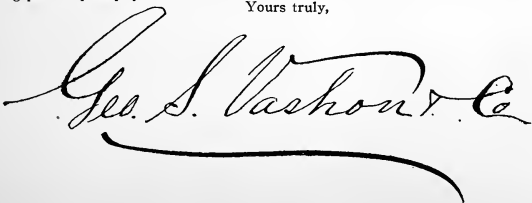
As your financial success will depend upon the strength of the claims of your patent, you should be careful to select a competent attorney to procure your patent. As an attorney who resides in Washington has the advantage of intercourse personally with the Patent Office Examiner, who will handle your case and decide whether or not you are entitled to a patent, and as he has also the important advantage of ready access to the valuable records of the Patent Office, you should select an attorney who resides in Washington. A further reason why you should select such attorney is that he can argue personally the merits of your invention before the Examiner, such arguments being more convincing than written arguments sent through mails.

WRITE FOR INFORMATION.

If you have not the time to read the contents of this book, you should preserve it for future reference, and write us, and upon receipt of your letter we will take pleasure in writing and giving you all the information you desire. We make this statement in order that you will not hesitate to write us at any time you desire to learn anything regarding the patent business or any information relating to your invention or any patents. We will not make any charge for this information.

We are experienced patent attorneys and are fully capable of handling properly all work entrusted to our care, and we have every facility for procuring patents promptly.

Yours truly,



Geo. S. Vashon & Co.



OFFICES: ROOMS 807-808, WASHINGTON LOAN AND TRUST BUILDING
COR. 9TH AND F STS., N. W., WASHINGTON, D. C.
GEORGE S. VASHON & CO.

HOW TO GET A PATENT

If you have an invention for which you desire to secure protection by letters-patent, forward a sketch, photograph or model of same to us, and you will be advised if a patent can probably be obtained. If your invention can be fully shown by a sketch or photograph, a model will not be required. On receipt of the sketch, photograph or model, we will carefully look into your invention and advise you, free of charge, whether we think it is new and patentable, our views being based upon our experience with such matters. Our opinion, therefore, you will see, is in the nature of an expert guess, and, while in some cases we can come pretty close to telling exactly what can be done, yet it is, as a rule, unsafe to depend upon a mere opinion, as in most cases it is advisable to rely only upon a special search of the Patent Office records. The cost of this special search of the record is \$5.

Many classifications of the Patent Office are very large, involving, in some instances, the necessity of examining more than a thousand different patents, often requiring several days to complete the search. You will, therefore, see the importance of the special examination and that its cost is a good investment for you to make, as further action is unnecessary, should we find your invention anticipated, while, on the other hand, should nothing be found to stand in your way, you can proceed at once to take out a patent for your improvements, and can do so with full confidence of success. Thus you will observe that a preliminary examination is of great value to the inventor, preventing the loss oftentimes resulting from filing an application without first making such investigation, and also enabling the inventor to modify or change his invention to avoid conflicting with patents previously granted, if any. Furthermore, we will not guarantee a patent without first making this examination.

OUR GUARANTEE CERTIFICATE OF PATENTABILITY.

After we have made this special search of the Patent Office records, we will advise you whether or not your invention is patentable, and, if patentable, we accompany our report with a certificate, which not only certifies that, in our opinion, based upon a careful and thorough search of the Patent Office records, the invention is

patentable, but also supports such opinion with an agreement to return to you the amount of the fee paid us for preparing and prosecuting your application for patent in case of our failure to secure you a patent. In brief, we give you a substantial guarantee that our search was most thorough and reliable, and demonstrate our own confidence in our work.

The importance of this guarantee certificate to an inventor seeking financial aid from friends or others to pay the expense of securing a patent has been fully proven.

Those who advance money under such circumstances usually want something more than an off-hand opinion that the invention is patentable, and if the inventor can satisfy them that the patent will be granted, or, if not granted, that the attorney's fee advanced will be returned in full, there is little difficulty in procuring the required assistance, if needed.

THE COST OF A PATENT.

Attorney's Fee	\$25 00
Patent Office Drawing (one sheet).....	5 00
First Government Fee	15 00
Final Government Fee.....	20 00
Total	<u>\$65 00</u>

In cases of a complicated or difficult nature the total cost of the patent will be more than above stated; the drawings costing more and the attorney's fee increased in accordance with the amount of labor which the case requires, the Government fees being the same in all cases.

In intricate cases where the cost exceeds the above scale you will be so informed before we proceed.

If you file an application for patent through us, the \$5 sent us for the examination or search as to patentability will be credited on our fee for the preparation and prosecution of the application which, as above stated, in an ordinary case, is \$25—thus leaving only \$20 to pay on the attorney's fee, and this \$20 is the amount we agree to return in event of failure to get a patent, and as provided in our guarantee certificate. If we report that a patent can be secured, the balance of our fee (\$20) must be remitted to us and

upon the receipt of this we will prepare the application papers and forward them to you for your approval and execution, together with a blue print of the drawings, the latter we furnish free of charge.

When the papers have been executed and are ready for filing, the first Government fee of \$15, and \$5 to defray the cost of one sheet of a Patent Office drawing, making \$20 in all, will be due. Thus it will be seen that the entire cost of filing an application through us on a simple invention is but \$45. The application will be prosecuted to an early conclusion, and when the patent is allowed notice will be sent you, after which you will have six months to pay the final Government fee of \$20.

THE APPLICATION.

The application papers include the petition, specification, oath, and, where possible, drawings, which to secure attention, must be filed in the Patent Office together with the first Government fee of \$15. As soon as the application is filed you will be protected against the grant, without your knowledge, of a patent for the same thing to another person. After the application has been filed we send you the official filing receipt. The specification should contain a clear, concise and accurate description of the device and its operation; the advantages and conveniences should also appear. To this should be subjoined a condensed statement of the invention in the form of one or more claims embodying all its novel features.

THE CLAIMS.

The actual value of a patent is measured by the character of its claims. While formerly the impression prevailed to a great extent that the essential thing to insure protection was a patent of some kind, the manufacturing public has been educated to understand that the vital and all-important part of a patent is its claims. If the claims are narrow and restricted, the patent is comparatively worthless; and on the other hand, if the invention is valuable and well covered by broad and comprehensive claims, the patent is readily indorsed by manufacturers, their consulting counsel, and meets with prompt sale and adoption. If patents were properly prepared at the outset, the number of patent suits would be greatly decreased, as the rights of the patentee would stand out in such unmistakable language in the claims that rival parties would not care to trench upon the clearly defined rights of the patentee.

Experienced inventors and patentees appreciate the importance of having their applications for patent intelligently prepared, and skillfully prosecuted.

The Supreme Court of the United States (case of *Topliff vs. Topliff*—1892) in an opinion by Mr. Justice Brown, makes this statement:

"The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons, to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention."

This comment from the highest legal authority in the United States is an injunction and a warning to inventors to entrust their business only to experienced counsel.

Special training and experience are required to properly prepare an application and prosecute it to allowance upon the best possible claims.

To secure a patent is one thing, but to secure a patent that will stand subsequent judicial investigation, and effectually protect the patentee against imitators or evaders, is a different undertaking.

While the Examiners of the Patent Office are, to an extent, judicial officers, they at the same time stand in the position of attorneys for the Government, and strenuously oppose the granting of broad, sweeping claims if there is any ground for opposition, since any laxity on the part of the applicant in claiming his invention inures to the benefit of the public whom the Examiner represents. And if an applicant for patent presents limited claims which do not amply protect his invention, instead of claims of sufficient legal scope to prevent the appropriation of the invention by imitators and infringers, it is not a part of the duty of the Patent Office to suggest the presentation of broader claims, but to allow the application upon the claims of record.

In brief, the inventor is presumed to know what he has invented and to understand the scope of the claims filed; and in case of litigation the courts cannot broaden the scope of a claim beyond the obvious meaning of the language employed.

As above stated by the Supreme Court "valuable inventions are often placed in the hands of inexperienced persons," and it is a matter of common knowledge that many applications for patent are pre-

pared by persons who have had no legal training, and who consequently have no appreciation of the legal scope of patent claims as defined and established by the courts.

In this connection we will say that specifications for applications for patent, as well as all other legal documents emanating from our office, are prepared by lawyers of experience, who are specialists in patent law.

PROSECUTING THE CASE BEFORE THE PATENT OFFICE.

A well prepared specification and well executed drawings greatly expedite the allowance of an application by the Patent Office, as the Examiner is thus relieved of annoyance and unnecessary work in the examination of the case.

The Patent Office Examiners appreciate good work on the part of the attorney, and when a specification fully and intelligently sets forth the invention, and presents claims of proper form and scope, much unnecessary labor and correspondence are avoided, and the Examiner's whole attention can be given to the search required, to determine the novelty of the invention, instead of to criticising the description and claims.

On the other hand, a case which is poorly and incorrectly prepared entails upon the Examiner much study and extra labor in determining just what the applicant is seeking to claim; and loosely drawn specifications and inferior drawings naturally have a tendency to prejudice the Examiner in his action.

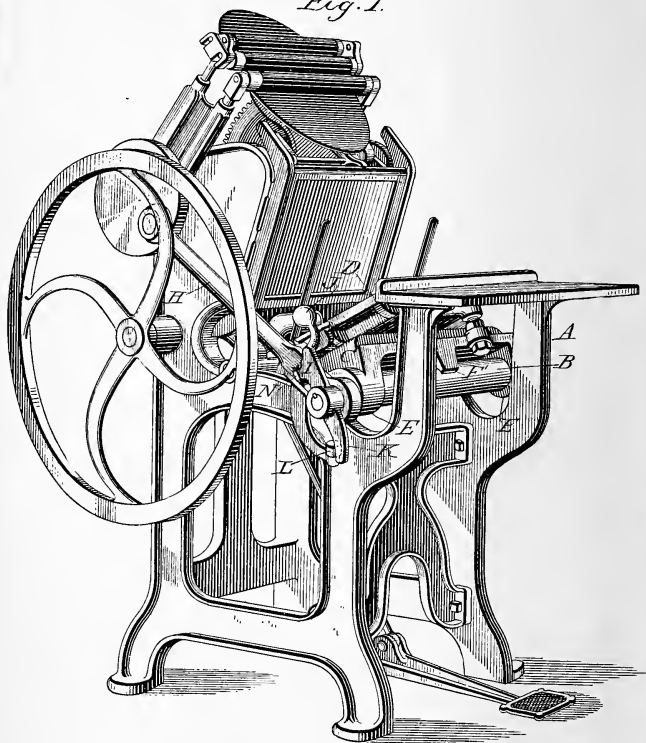
It is obvious that when an invention is well shown, described and claimed, no criticism on the part of the Patent Office is required, except such as may affect the scope of the claims based upon prior patents, which the Examiner may find in his search, and the points at issue between the applicant and the Examiner are quickly defined and may be speedily determined, if the attorney resides in Washington.

THE OFFICIAL DRAWINGS.

Next in importance to the proper preparation of the specification and claims comes the Patent Office drawings.

During the preparation of the application for patent, it sometimes becomes necessary to prepare more than one sheet of drawings to illustrate the invention as required by the rules and regulations of

Fig. 1.



Witnesses

Inventor

the Patent Office. In such cases the usual expense of filing an application is increased proportionately to each additional sheet of drawing required. Our experience teaches us that it is money well spent to show every detail of an invention by large, clear, well executed drawings. By this means we facilitate examinations in the Patent Office and invariably secure the most satisfactory results in the shortest period of time.

We are fully aware of the importance of having the drawings prepared by the most skillful and experienced draftsmen obtainable. In all cases entrusted to us the drawings are made under our personal supervision by draftsmen in our constant employ, and every precaution is taken that the inventions be fully and clearly shown by different views so as to be readily understood by the Examiners of the Patent Office and comprehended by the public when the patent is granted.

This book contains samples of Patent Office drawings showing the character of work furnished our clients. We make a specialty, as shown in the drawings, of illustrating the application of the invention, pictorially, whenever practicable. The value of well executed pictorial drawings does not end with the proper showing of the invention for the purpose of the patent, but copies of the patent can be had in any quantity by the inventor for use in bringing his invention before manufacturers and capitalists, and much depends upon the impression given by the drawings. If the invention is well illustrated, the inventor has in his patent a suitable cut for use in advertising and for other purposes, and photo-engraved plates can be produced by us from these drawings. No cut will be made for less than \$4.00.

TERM OF THE PATENT.

Patents are granted in this country for the term of seventeen years and no longer, during which time the patentee has the exclusive right to make, use, and sell the patented invention.

TIME NECESSARY TO SECURE A PATENT.

It is impossible to state with certainty the time required to secure the allowance of patents. This varies with the division in the Patent Office to which the application is referred. There are thirty-eight of

Fig. 1.

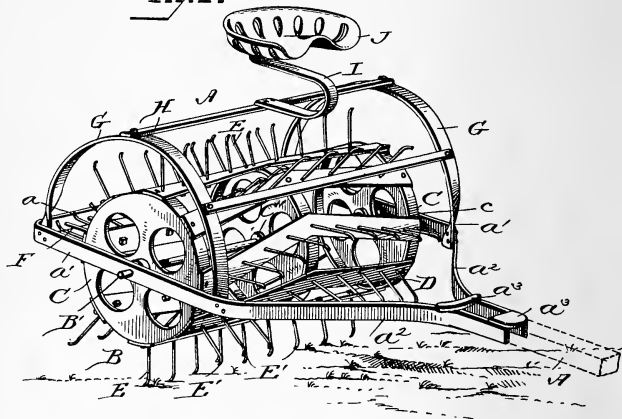
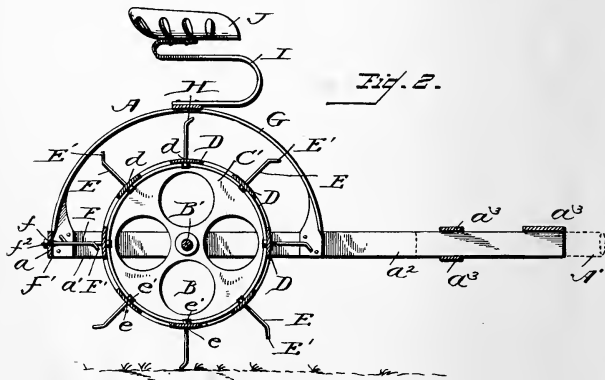


Fig. 2.



Witnesses

Inventors

these divisions, and each one is more or less in arrears with its work. It usually takes, however, from two to three months to procure a patent.

We make it a point to be prompt with our correspondence, and preparation of the requisite papers and drawings. Each case is filed at the earliest possible moment, and as they are taken up for examination by the Patent Office officials in the order they were filed, there is absolutely no delay.

WHO CAN APPLY FOR PATENT.

Citizens, foreigners, women, minors and the administrators of deceased inventors, may obtain patents. There is no distinction as to nativity, persons or charges.

JOINT APPLICATIONS.

Two or more persons may apply jointly for a patent if they are joint inventors. If one person is the inventor and the other only a partner, the patent must be applied for in the name of the inventor alone; but he may secure his partner in advance by executing a deed of conveyance so drawn that the patent will be issued in both names. It is of the greatest importance that the true position of joint applicants should be thoroughly understood by the attorney, in order that he may prepare the papers so as to properly protect the interests of both parties. If both applicants are inventors, they should both sign the application papers, but if they are joint owners merely, the inventor alone should sign the application papers, and assign the proper interest to the other party. A patent would not be valid in which one of the parties interested had signed the application papers without being a co-inventor.

WHAT MAY BE PATENTED.

A patent may be granted for: (1) any new and useful art or process; (2) any new and useful machine; (3) any new and useful manufacture; (4) any new and useful composition of matter; (5) any new and useful improvement thereof; provided the art, machine, manufacture, composition of matter, or improvement thereof, for

which a patent is desired, was not known or used by others, in this country, and has not been patented or described in any printed publication in this or any foreign country, before the applicant's invention or discovery thereof, and has not been in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned.

MANUFACTURING UNDER PATENT APPLIED FOR.

Every inventor has the right, when he has an application for patent pending in the Patent Office to manufacture and sell his goods, and to mark them "Patent Applied For."

It is better, however, not to exploit your invention until your patent issues, as there is a danger of an interference being declared in the Patent Office. Furthermore, in most foreign countries patents are granted to the first applicant, whether the inventor or not, and the inventor is likely to lose his right to obtain foreign patents thereon, as some one seeing his invention on the market in the United States, may proceed to patent it in foreign countries.

OBTAINING ASSISTANCE.

Where an inventor has not the means to procure a patent for his invention or to file a caveat, we would suggest that he endeavor to interest some one in his vicinity to whom he can personally explain the merits of his invention, and agree to assign to such a person a part interest therein, in consideration of the fees necessary to secure a patent. When this has been effected we shall be glad to prepare the required assignment. Our guarantee Certificate of Patentability has been of great assistance to inventors without funds, as it gives the capitalists the necessary assurance of patentability as well as an obligation to return the money advanced, in case of failure to secure a patent. In order to protect his interests while seeking to interest capital in his invention, we recommend that the inventor forward us sketches and description, duly witnessed, of his invention, which we will place in our secret files, and in case an attempt should be made to pirate the invention, we would then be in a position to protect the rights of the inventor.

ASSIGNMENTS.

An inventor may sell and assign his invention either before or after application for patent has been made, or after the patent has been issued. He may sell or assign any portion, such as one-fifth or one-half interest in the patent, or a town, county, or state right, or he may grant the right to manufacture on a royalty. If assigned before the patent is granted, the purchaser will enjoy the right under the patent whenever it is issued. Trade marks, copyrights and labels can also be assigned.

Every assignment affecting the title of a patent, trade-mark or label must be recorded in the United States Patent Office. Assignments of copyrights have to be recorded with the Librarian of Congress. Those who desire to have assignments of patents or licenses, or assignments for trade-marks, labels or copyrights drawn in proper form and recorded, will please communicate with us, stating the full names and residences of the parties, the shares to be conveyed, the title of the invention, and if already patented the date of the patent. Also remit \$5.00, which is the cost of preparing, filing and recording the assignment.

THE VALUE OF ATTORNEYS.

The inventor will see the advantage to be derived from placing his business in the hands of those only who are specially skilled in this class of work.

The inventor should never endeavor to prepare his own application. He is apt to leave valuable features of his invention unclaimed, and attach undue importance to some immaterial feature. Although he may have a good education, and a quick perception, and some knowledge of patent matters, he cannot have the necessary experience to insure absolute accuracy. This work should be done by a skilled and experienced patent lawyer. A claim properly drawn may mean wealth to the inventor, whereas one improperly drawn generally means the total loss of the invention.

So important are the services of a reliable, trustworthy and skillful attorney to inventors that the Commissioner of Patents has, in the "Rules of Practice," issued this general warning: "As the value of patents depends largely upon the careful preparation of the speci-

cation and claims, the assistance of a competent counsel will, in most cases, be of advantage to the applicant, but the value of their services will be proportionate to their skill and honesty, and too much care cannot be exercised in their selection."

CAVEATS.

The purpose of a Caveat is to protect the Inventor while he is working out the incomplete details of his discovery. It should set forth as clearly as possible the general construction, operation and purpose of the invention. If you have completed your invention you should file an application for Patent at once, for under such circumstances the filing of a Caveat would involve a needless expense.

The filing of a Caveat gives you immediate protection against anyone filing an application for a Patent for the same invention, and is an indestructible official record of proof in establishing the date upon which you first made your discovery.

Caveats, like Patent applications, are guarded with the strictest secrecy by us and by the Patent Office, so that it is impossible for anyone to have access thereto without your written permit.

As soon as the Caveat is filed you can manufacture and sell the invention under the stamp "Caveat Filed," which is often a valuable privilege. The degree of protection afforded, however, is limited, compared with a Patent application, as you cannot prevent others from selling the invention until you are granted a Patent. This fact demonstrates the importance of perfecting your device and applying for Patent as early as possible. The chief function of the Caveat is to make an *indestructible and undisputable official record* of the invention, and such record has proven of immense value to many inventors.

A Caveat application consists of a Petition, Specification, Oath and Drawing, and its preparation should only be entrusted to a skilled Patent Solicitor.

The total cost of a Caveat, for a simple invention, is \$25, being \$10, Government fee, \$10, attorney fee and \$5 for drawings.

Send us sketches, a model or photographs, and write a full description of the invention; remit \$10, on account, and the complete application will be at once prepared and forwarded for your approval and execution.

A Caveat may be renewed from year to year by the payment of a Government fee of \$10. Our charge for preparation and prosecution of Petition for renewal is \$2. The total charge of \$12 is payable in advance.

PATENTS FOR COMPOUNDS, ETC.

Cleaning and Polishing Compounds, Cements, Metal Alloys, Soaps, Leather Dressings, Fertilizers and Medicines, Hair Dressings, Cosmetics, Ointments and the like; in short, all useful liquid and solid mixtures may be patented.

Instances can be multiplied wherein Patents on new discoveries in this line of invention have made millionaires of their owners. Patented medicines such as "Green's August Flower," "Perry Davis Pain Killer," "Ayer's Cherry Pectoral," "Hood's Sarsaparilla," "Paine's Celery Compound," and many others are examples, while useful compounds like "Sapolio," "Electro-Silicon," "Rising Sun Stove Polish," and "Ivory Soap" are "household gods" in our own and foreign lands and have netted immense fortunes.

The total cost of a Patent in this class of cases is \$60, \$25 of which is the attorney's fee, and upon receipt of that amount, together with a *statement of the quantity and name and particular purpose of each ingredient used and the manner of compounding same, as well as a statement of the use of the complete preparation*, we prepare the application papers complete and forward same for your approval and execution, to be returned to us with the first Government fee of \$15. The final Government fee of \$20 may be paid any time within six months from the date of allowance.

Double protection and business advantage is secured by also adopting a Trade-Mark and registering the same in the United States Patent Office.

Term of Patent 17 years.

Term of Trade-Mark, 20 years.

DESIGN PATENTS.

The law authorizing the issue of design patents is very broad. These patents may be granted to any person, who, by his own industry, genius, effort and expense, has invented or produced any new and original design for a manufacture, bust, statue, altorelievo or bas-relief; any new or original design for the printing of woollens, silk,

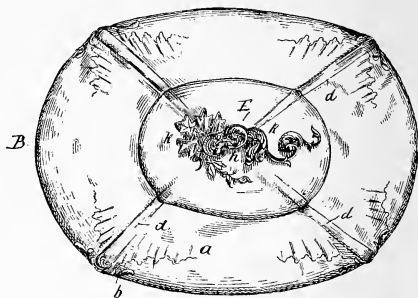


Fig. 1.



Witnesses

Inventor.

cotton, or other fabrics; any new and original impression, ornament, pattern, print or picture to be printed, painted, cast, or otherwise placed on or marked into any article of manufacture; or any new, useful, or original ornamentation of any article of manufacture, the same not having been known or used by others before his invention or production thereof, or patented or described in any printed publication.

All new designs should be protected. Design patents for the pattern of a machine, or designs on a machine, can be secured in addition to a mechanical patent for the machine itself. These patents are never issued for mechanical devices, but only for ornamental features.

In a number of instances large business interests have been built up with a design patent as a basis.

Design patents have been liberally construed by the courts. They hold that such a patent covers not only what is shown in the patent, but also those things which have a near enough resemblance to appear the same to ordinary observers.

The total cost of a design patent, including Government and attorney's fees, and one sheet of drawing, is:

	Attorney Fees.	Gov't Fee.	Total.
Patent for 3½ years.....	\$20.00	\$10.00	\$30.00
“ “ 7 “	20.00	15.00	35.00
“ “ 14 “	20.00	30.00	50.00

TRADE-MARKS.

The new Trade-Mark Law passed by Congress, and which went into effect April 1, 1905, makes it imperative for every one who values the protection of his trade-mark to register under this law.

Under its terms, all trade-marks, whether registered at Washington or a Bureau, must be re-registered at Washington in order to obtain protection under the new law.

Heretofore injunctions of courts did not apply outside the immediate section where they were granted. Under the new law, an injunction once secured in any Federal Court extends its force throughout every State and Territory in the Union.

It is further provided that before granting registration the Commissioner shall cause the trade-mark to be published at least once in the Official Gazette of the Patent Office, and any person who

believes that he would be damaged by the registration may oppose the same by filing notice of opposition, stating the ground thereof within thirty days after the publication of the mark sought to be registered.

The latter provision enables the true owner of the trade-mark to prevent his right to its exclusive use from being jeopardized by the registration of the same or a similar mark by an applicant who may not be entitled to registration.

The right of appeal is provided, the same as in the case of applications for patents, from an adverse decision of the Examiner of Trade-Marks or the Examiner of Interferences, as the case may be, to the Commissioner in person, and from the Commissioner to the Court of Appeals of the District of Columbia.

The life of a certificate of registration is changed from thirty years to twenty years, but the certificate of registration may be renewed from time to time upon certain conditions, and upon the payment of the required fee. The Government fee for registration is reduced from \$25 to \$10.

Registration will afford prima facie evidence of ownership, and any person using any registered trade-mark without the consent of the owner thereof will be liable for damages, and on the rendition of a verdict for the plaintiff, the court, in its discretion, may enter judgment for three times the amount of such verdict.

The new law affords additional remedies and more complete and adequate protection, and in order to give the owners of trade-marks previously registered the enlarged benefits under the new law, the act makes provision for the re-registration of said trade-marks upon payment of the fees.

Provision is made for the first time for registering trade-marks used solely in Interstate Commerce, and the new law is so far-reaching and complete in its protection to lawful trade-mark owners that registration of a trade symbol or mark will prove of great value from a commercial standpoint.

A trade-mark may consist of any non-descriptive word or words, sign, symbol, picture, autograph, monogram, or any combination of any or all of them. Descriptive words cannot be registered; for instance, "Washing Soap" or "Can Corn" could not be registered, but descriptive words combined with non-descriptive words may be registered; thus, "Eureka Washington Soap" and "Excelsior Can Corn" are properly registrable.

Sometimes words which are descriptive are combined in a single word and phonetically or fancifully spelled, and in such cases they usually constitute a valid trade-mark, but it is the figure or emblem that makes the mark valid. A word can be adopted for the trade-mark which is suggestive, but not descriptive, and this is often the best kind of a mark for particular kinds of goods. The mere name of the applicant cannot be registered, but his name, together with a device or design, etc., is entitled to registration. Geographical names cannot be trade-marked.

A trade-mark need not be new or original, but it should be new to the purpose to which it is applied. Thus a trade-mark on "The Rising Sun," applied to flour, would not prevent the registration of the same words as applied to stove polish.

Persons desiring to know whether certain words or devices can be registered should send us a copy or description of the mark and the class of merchandise on which it is used, including a particular description of the goods comprised in such class. Five dollars should also be sent as a guarantee of good faith with the above data. We will then make a search of the trade-mark records in the United States Patent Office and send a full report of the result of the examination. We will not make any charge for this search if a trade-mark is registered through us, but will credit the \$5 advanced on our fee.

In order that we may be enabled to prepare the application papers we should be furnished with the name of the owner, and if a firm be the proprietor, the names of the individual members thereof, their residences, and places of business. Five specimens of the trade-mark as used must be filed with the specification and drawings in the United States Patent Office. The right to the use of a trade-mark is assignable in writing and such assignment should be recorded in the Patent Office. We prepare these assignments, the cost of preparation and recording being \$5.

COST OF TRADE-MARK.

The Government fee in each case is \$10, while our fee, including one sheet of drawings and the preparation of the necessary papers, is \$15 in original cases, and \$10 in cases where application is made for re-registration.



Witnesses

Inventor.

TRADE-MARK MUST BE USED CONTINUOUSLY.

A trade-mark is good only so long as it is used, and it must be used continuously by the owner in business, and the owner must have for sale the goods bearing the mark.

TRADE-MARKS IN FOREIGN COUNTRIES.

Trade-marks can be registered in foreign countries having treaties with the United States. The total cost of procuring trade-marks in foreign countries is as follows :

Great Britain	\$30.00
Germany	30.00
France	25.00
Austria	30.00
Russia	40.00
Italy	35.00
Spain	30.00
Belgium	30.00
Norway	35.00
Sweden	35.00
Denmark	35.00
Switzerland	25.00
Canada	40.00

LABELS.

Prints and labels to be used in connection with articles of manufacture may be registered in the Patent Office. The certificate of registration will continue in force for 28 years.

The words "prints" and "labels," as used in the act, are nearly synonymous, and are defined as any device, picture, word, or words, figure, or figures, impressed or stamped directly upon manufactured articles, or upon a slip or piece of paper, or other material, to be attached in any manner to the articles, or to bottles, boxes or packages containing them, to indicate the contents of the packages, the name of the manufacturer or the place of manufacture, the quantity of goods, directions for use, etc. No print or label can be registered as such if it contains matter registerable under the trade-mark law, in which case a trade-mark should be registered; then the print or label embodying the trade-mark may be registered.

The entire cost of registration under this act, including the Government fee, is \$20.00. Citizens of this country and of certain European countries having treaties with the United States are entitled to the benefits of the act. Registered prints and labels are assignable in writing. We prepare such assignments. Cost of preparation and recording, \$5.00.

COPYRIGHTS.

Many people have a notion that the Copyright Law is intended for the benefit of inventors and manufacturers and that a label, print, trade-mark, or even sometimes a process or mechanism can be protected by copyright. This is a mistaken idea. The Copyright Law is for the protection of purely literary or artistic productions, and provides that any citizen or resident of the United States who is the author, designer or proprietor of any book, map, chart, dramatic or musical composition, engraving, cut, print, or photograph, or negative thereof, or a painting, drawing, chromo, statuary, models of designs intended to be perfected as works of fine art, may obtain a copyright.

To secure a copyright the title or description of the book or article must be filed with the Librarian of Congress, on or before the day of publication; and to perfect the copyright two copies of the work must be delivered to the Librarian not later than the day of publication.

Persons desiring copyrights should send us their names and residences, the title of the book, map, dramatic or musical composition, cut, print, or photograph, or a description of the painting, drawing, statue, etc., and state whether they claim the right as author, designer, or proprietor. The work itself need not be sent. The cost of a copyright is \$5.

Copyrights may be secured for projected as well as for complete works. Each number of a periodical requires a separate copyright. The title of a periodical should include the date and number.

The term of a copyright is 28 years, and it may be renewed within six months before the end of that time for a further term of 14 years.

INTERFERENCES.

Two or more inventors having applications before the Patent Office claiming substantially the same thing are adjudged to interfere. To determine who first conceived the invention, it is the duty of the attorney for each applicant to take the evidence of his client and submit it in proper form, by written and oral argument, before the interference tribunal of the Patent Office. This requires the highest skill on the part of the attorney, and is one of the most technical and difficult branches of Patent practice.

Our long-established business as Patent Attorneys has given us broad experience and our prosecution of interference cases has been uniformly successful.

No fixed fee can be quoted, as the labor and skill required varies widely, depending entirely upon the nature of the case, the number of parties, and the time consumed in accumulating evidence. Suffice it to say that our fees will be found as low as can possibly be made, consistent with the magnitude of the case, and we give full particulars as to terms before proceedings are instituted.

Interferences are of very rare occurrence.

INFRINGEMENTS.

Infringement is the illegal use, sale, or manufacture of a patented article. After you have obtained a Patent no one has the right to make, use, or sell the invention except with your consent. If another person makes your patented invention solely for private experiment, to test the sufficiency of the Patent or improve upon the invention, it is not infringement, nor is it an infringement for anyone to patent improvements he makes on a patented invention.

You can depend upon it that a Patent obtained through us will be as broad in scope as your invention; it will cover every novel element and *will protect you* against any one who would dare to illegally infringe your rights thereunder.

It is not said boastingly, but as a duly-authenticated statement of fact, that Patents obtained through us are "*Patents that Protect.*" The claims—which are the very strength and life of the Patent—are formulated, under our policy, with the utmost skill and care, every invention being closely and critically studied and all of its various functions and adaptations adroitly elaborated and discussed in the specification of the application, so that the claims will broadly comprehend the fullest novelty. Under this system of thoroughness and exactitude our clients are insured to a maximum degree against infringing and being infringed.

If your Patent is obtained through us you are welcome to write us for advice at any time if your rights are assailed. We will inform you promptly and fully what is best to do, and for such advice will make no charge.

APPEALS.

It is a strict rule of our practice to exhaust every resource to secure allowance of Patent from the Primary Examiner, yet it happens in rare instances that a case is finally rejected, either because there is inability on the part of the particular Examiner in charge to comprehend the novelty and usefulness of the invention, or because there is a disagreement as to the pertinency of references, and the Examiner is obstinate in his refusal to yield his position.

To provide for these contingencies the Government maintains a Board of Examiners in Chief, an authority higher than the Primary Examiners, and consisting of three persons eminently qualified to decide questions involving the most intricate technicalities of the arts and sciences. From this board appeal may be had to the Commissioner of Patents in person, who is next in authority to the Court of Appeals of the District of Columbia, a third tribunal of appeal.

The Government fee for appeal to the board is \$10, and our fee ranges from \$10 to \$25, depending upon the nature of the case.

Appeal to the Commissioner demands a Government fee of \$20, and our fee ranges from \$20 to \$50.

Cost of appeal to the Court of Appeals of the District is governed by the nature of the case and attorney fee must be regulated by agreement.

The foregoing is stated for the information of inventors. Our management of cases before the Primary Examiners is such that there are extremely few cases in which appeal is even a probability.

REJECTED CASES.

The fact that your application has been rejected by the Primary Examiners of the Patent Office, does not mean that the invention is lacking in patentable novelty or inherent merit. It may be that through incompetence, or inexperience, or both, or on account of inattention and neglect on the part of your attorney, the invention has been improperly and inefficiently set forth in the specification and drawings or has been weakly and inadequately defended against objections raised and Patents cited by the Examiners and for this reason the grant of a Patent denied; or without realizing the expert technical knowledge required, you have yourself attempted the prosecution of the application, and received notification from the Patent Office that the case must be entirely re-prepared.

It is a common incident in our practice to aid inventors who find themselves in such predicaments. Our charges are moderate and we act promptly and decisively. *Give us the name of the invention, date of filing, and serial number.* We will send you a Power of Attorney for signature, which will give us access to the file of the case in the Patent Office, and enable us to make a skilled examination into its condition and report to you whether in our opinion a Patent can be obtained and exactly what our charge will be to obtain it for you.

COPIES OF PATENTS.

Complete printed copies of the drawings, specifications and claims of any Patent granted since July 1, 1861, will be mailed by us to any part of the United States for 10 cents each.

Drawings only, of Patents issued prior to above date, can be furnished, as the Government has not printed the specifications and claims. The latter will be furnished in typewritten form at a reasonable charge governed by number of copies wanted and number of words.

Remit with order and give approximate *date* of Patent and *name* of *patentee*, otherwise a search of the official records would be necessary, involving extra cost.

FOREIGN PATENTS

The United States Patent Laws apparently contemplate that an invention patented here is also worthy of protection abroad, in the principal countries at least. In many countries a Patent obtained after the invention is patented elsewhere is *invalid* and worthless. For this reason it is of *vital consequence* that Foreign Patents be *applied for* before the final Government fee, for the United States Patent, is paid into the Patent Office.

Our laws provide a period of six months after your application is allowed at any time within which the final Government fee may be paid, thus enabling you to complete financial arrangements for the taking out of valid Foreign Patents. Your allowed United States application is held secret until the final Government fee is paid, so that *no one can apply in foreign countries ahead of you.*

For the convenience of inventors the countries foremost in importance are treated here and costs stated. If your United States Patent application required more than one sheet of drawings, add \$5, for each sheet in excess of one, to the amount quoted for each country.

CANADA.

Owing to the close proximity of Canada to the United States and the brisk and augmenting commercial intercourse between the two peoples, every inventor should avail himself of the great advantage to be gained by taking out a Canadian Patent.

Canada embraces the provinces of British Columbia, Nova Scotia, Prince Edward's Island, Manitoba, Ontario, New Brunswick and the Northwest Territory; a vast domain greater in area than the United States.

The whole outlay required to secure a Canadian Patent is \$35, which includes the Government tax, agency, and all charges for the patent.

IMPORTANT.—Unless you can file your application in Canada within three months from date of your United States Patent you should not fail to lodge a "Notice of Intention to Apply." Otherwise you cannot stop anyone who commenced the manufacture of your invention in Canada before issuance of Patent there. For the preparation and filing of the Notice our charge is \$5. We would advise that you file application for Patent within three months from issue of United States Patent, and thereby save the cost of the notice. The sooner you file the better.

ENGLAND.

The commercial importance of England is such that no intelligent person can fail to comprehend the momentous benefits to be realized from patenting a meritorious invention there. The English capitalist is quick to invest liberally, because he well knows the ready recognition of the skill of our inventors in all portions of the world.

An English Patent covers England, Scotland, Ireland, Wales and the Isle of Man, aggregating a population of nearly forty millions.

The total cost is \$50, which includes the Government fee.

PROVISIONAL PROTECTION, resembling that afforded by a United States Caveat, and enduring for six months, may be obtained under the English Patent laws. Total cost, \$25. To file application complete after provisional protection and obtain Patent, \$50. Term, fourteen years.

FRANCE AND COLONIES.

\$60.—The term of a French patent is fifteen years, and includes Algeria, Senegal, French Soudan, Dahomey, French Congo, Madagascar, French Indo China, Martinique, Guadeloupe, French Guiana, New Caledonia, Tahiti, etc. Next to England in value to the patentee is France. Her manufacturers are enterprising and quick to appreciate and adopt inventions of American origin.

GERMANY AND COLONIES.

\$65.—The term of a German patent is fifteen years. German design patent, term three years, \$35, extension for three years longer, \$30. German patents include Germany, German East and South West Africa, Kameron and Togo Land, German Papua, Bismarck Archipelago, Caroline Islands, Kiou-Chui, etc. Germany is progressive and is rapidly adopting and perfecting American methods.

BELGIUM.

The cost of a Belgian patent is \$35; term, twenty years. Belgium is the manufacturing center for a large part of Europe, and is one of the most desirable countries in which an American inventor can apply for patent protection.

DENMARK, \$50; term, fifteen years.

NORWAY, \$50; term, fifteen years.

SWEDEN, \$55; term, fifteen years.

SWITZERLAND, \$50; term, fifteen years.

PORTUGAL, \$100; term, fifteen years.

SPAIN, \$55; term, twenty years.

ITALY, \$70; term, fifteen years.

RUSSIA.

The cost of a Russian patent is \$80; term, fifteen years. A valid patent can be obtained in Russia after the issue of the United States patent. The Russian Empire includes Russia, Poland and Siberia, and covers the enormous territory of ten million square miles. Its population is three times that of any European country. Russia is a continent in itself and is one of the most prominent fields for American inventors.

HUNGARY, \$60; term, fifteen years.

AUSTRIA, \$60; term, fifteen years.

TURKEY, \$80; term, fifteen years.

MEXICO.

The cost of a Mexican patent is \$75; term, twenty years. America is now connected with all parts of Mexico by rail, and our commercial relations are therefore very close. Great progress has been made in Mexico of late and a great number of factories are located there. Patents on mining machinery are especially valuable.

ASIA.

INDIA, \$80; term, fourteen years.

The patent covers all of British India, including Burmah; population, 300,000,000. The application should be filed within one year of the issue of the United States patent.

CEYLON, \$175; term, fourteen years.

EMPIRE OF CHINA, \$100.

JAPAN, \$90; term, fifteen years.

AFRICA.

CAPE COLONY, \$125; term, fourteen years.

NATAL, \$100; term, fourteen years.

EGYPT, \$125; term, same as applicant's United States patent.

CENTRAL AMERICA.

HONDURAS, \$175; term, ten years.

NICARAGUA, \$175; term, five to ten years.

COSTA RICA, \$225; term, same as United States Patent.

WEST INDIES.

CUBA, \$70; term, seventeen years.

JAMAICA, \$125.

TRINIDAD, \$140.

BARBADOS, \$100.

BAHAMA ISLANDS, \$125.

SOUTH AMERICA.

BRAZIL, \$125; term, fifteen years.

ARGENTINE REPUBLIC—Patents are granted for five, ten and fifteen years; cost respectively, \$130, \$175, and \$280.

CHILI, \$230; term, ten years.

PERU, \$280; term, ten years.

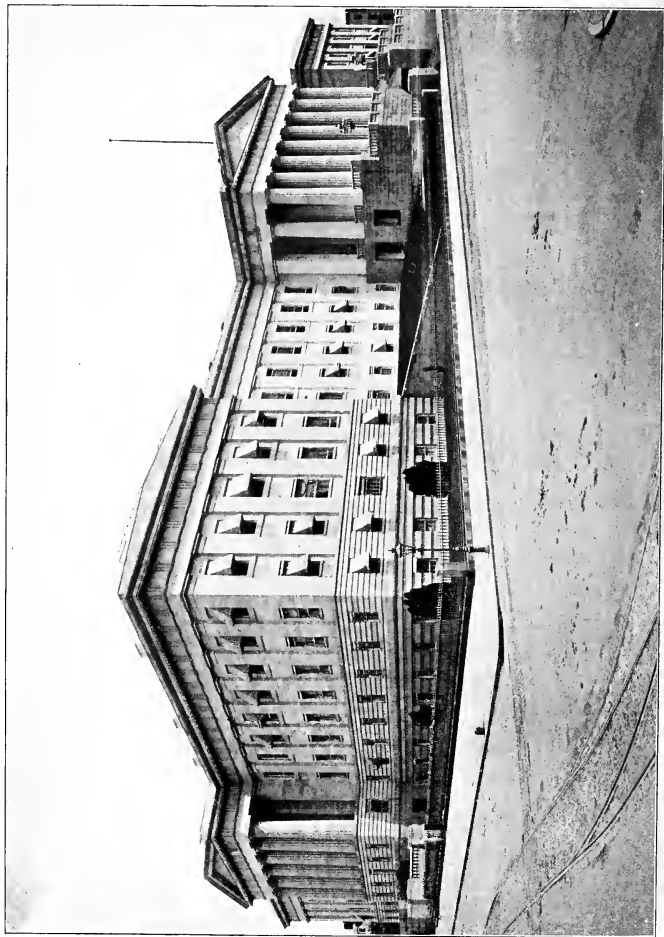
UNITED STATES OF COLUMBIA—Patents are granted for five, ten, fifteen and twenty years; cost respectively, \$140, \$190, \$240, and \$290.

THE AUSTRALIAN COMMONWEALTH.

The Australian colonies of Victoria, New South Wales, Queensland, South Australia, Tasmania and West Australia have been formed into a commonwealth. One patent only is necessary now, where six formerly were required. The cost of the new Commonwealth patent, which is granted for fourteen years, is \$85. An inventor cannot afford to neglect to secure a patent in the Australian Commonwealth, as the country is progressive and rich. On account of the gold and copper mining industries the population is rapidly increasing. Coal, iron, tin and other mineral wealth abounds. The production of wool is greater than that of any other country in the world. Immense tracts of land are being opened to cultivation and settlement. The increasing activity demands the introduction of inventions and labor-saving devices and systems of every character. The prosperity of Australia is evidenced by the fact that the standard of living and the consumption of commodities per capita are the highest in the world.

NEW ZEALAND.

The cost of a patent in New Zealand is \$50; term, fourteen years. The same progressiveness and commercial activity are apparent in New Zealand as in the Australian Commonwealth.



SPECIAL OFFER.

American inventors, owing to special facilities afforded, take out more patents in Canada, England, Germany, France and Belgium than any other countries. These five countries will secure to the inventor the exclusive monopoly of his invention among one hundred and forty-five millions of the most enterprising and progressive people of the world. When patents are ordered in all of these countries at the same time we make a special rate of \$230 for them, which, as will be noted, is a considerable reduction from the rates quoted for these countries separately.

COMBINATION RATES.

By special arrangements with our foreign agents, we are able to offer reduced rates when applications in two or more countries are filed at the same time. The following groups of countries have been specially selected with a view of reducing the total cost to the minimum, and a comparison of the charges named with those for the same countries singly will show the saving to the applicant:

Great Britain, France, Belgium and Canada.....	\$170
France, Italy and Belgium.....	140
Germany, Austria and Hungary.....	160
Great Britain, Germany, France and Canada.....	200
Sweden, Norway and Denmark.....	150
Brazil and Mexico.....	240
Canada and Mexico.....	105

The charges quoted in the above lists include the total cost of securing patents in the respective countries. We wish to state with emphasis that the figures quoted include all costs, without any extra charge whatever for securing the foreign patents, including our fee, Government fees, drawings, etc. We make this statement because our charges are considerably lower than those asked by others, and our clients are continually asking us if our fees cover the total cost for foreign patents.

We guarantee to secure the patent in foreign countries or return our fee, with the exception of Germany and Austria.

GENERAL INSTRUCTIONS.

Select the country or countries in which you want a patent, and remit \$5 for each country named. We will then send you application papers for approval and execution, according to the schedule of prices; or, if you prefer, send the full amount in the first remittance.

An important exception to the rule that Foreign Patents must be applied for before issue of United States Patent, occurs when the United States Patent has issued early enough to admit of the filing of foreign cases *within twelve months of the date of filing of the United States case.*

Also, issue of a Foreign Patent before applying in the United States will not invalidate United States Patent *if application is filed within twelve months from date on which foreign application was filed.*

HOW TO GAIN PROFIT BY INVENTION.

Not everyone has Inventive Genius, but a Multitude of Persons who have Do Not give it Exercise. Others Mentally work out Valuable Devices and Lack the Energy or Foresight to Patent Them. Many Patented Inventions have Proven Worth Thousands of Dollars for Every Minute of time Consumed in their Creation.

To profit by invention one must not only create the invention, but make it practical, from a financial standpoint, and protect it by a Patent.

The way to invent is to study how an existing device can be made to better answer its purpose; or to conceive a new purpose and devise a mechanical means for carrying it out. The field for invention is without bounds or limits. There are more opportunities for originating new and patentable, and profitable, devices today than there have ever been before, because it is an immutable physical law that every new condition works a change in other conditions requiring expedients for adapting and harmonizing one condition with another. The Invention of the railway, for example, effected a revolution in social and industrial life throughout the world and hundreds-of-thousands of other inventions, extending into every conceivable art, were a natural consequence.

Anyone of average intelligence can determine for himself *what to invent.* He needs but to study objects entering into daily use about him. There is room for improvement in everything, and these improvements if patented are bound to yield large money reward under good management. All patentable inventions are regarded by the Patent Office as *improvements*, for the reason that the very spirit of invention is to *improve upon existing conditions.* No doubt every reader of these lines has exclaimed, "Why didn't I think of it!" on seeing some simple, money-making article. Hundreds of such articles are patented annually. The Inventors who "keep their eyes open," and not only think, but *act* are justly the ones enriched. Ability to invent is the greatest natural endowment bestowed by a kind Providence. He who fails to exercise the faculty, gets no reward, and, as a rule, such go through life without finding reward in anything.

The most wonderful feature of invention is that a mere suggestion, or a mental hint, of some new thing, will soon assume perfection under careful thought, and this "thinking out" process is the thing needed to attain success.

The Inventor who does not *act* after he has "thought out" his invention, has made a failure from the standpoint of profit.

The first thing you should do after you have conceived an improvement is to write us, explaining your idea fully, and submit a sketch to enable us to make an examination as to patentability. If our report is favorable *file an application at once.* The chance to obtain a Patent on a meritorious invention is a *business chance of rare value*, but, like any other good business chance, must be promptly taken advantage of to realize that value.

After your Patent is obtained, the question as to the best way to obtain profit from it arises. If you are a manufacturer, or if you have had experience

in the organization of capital for the promotion of business enterprises, you do not need advice. If you would sell your Patent outright, or by territorial allotments, the following important suggestions should be observed:

Have absolutely nothing to do with patent selling agents, so-called, who load your mail with their persuasive and deceptive letters and circulars as soon as your Patent issues. (They get your name and address from the Patent Office Gazette, which circulates widely.) This warning is unnecessary if you have ever had dealings with these sharks, for "a burnt child shuns the fire." As we cannot undertake here to expose their many tricks, we ask you to take our advice as it is intended—for your good—and *shun* them, no matter how plausible their arguments. It is a matter of personal gratification and pride with us to have our clients realize abundant profit from their Patents; therefore, had we faith in these agencies, would be eager to recommend them.

A common dodge of the "Patent selling agent" is to pretend to have found someone who will buy your Patent if an investigation proves its validity, and a certain person (who is in league, of course,) is recommended as the proper one to make the investigation, for which you must pay a good fee. But it is all a game and the buyer a myth. With hardly an exception the agency claims to demand no fee until a sale is made, getting you to sign a contract to that effect, yet at the next turn you are asked to send money, on one pretext or another. You may be asked by one of these concerns to advance money for the alleged purpose of advertising your invention in a long list of newspapers, yet no one ever heard of a Patent sold in this way. To sum up our advice: *Don't bite, no matter how tempting the bait.*

The value of a Patent depends upon the value of the invention as a marketable commodity, and if the owner would financially realize upon this value he must himself through his own resources or through his own and the resources of others, place the manufactured article on the market; or he must *properly* bring the patented invention to the notice of those likely to be interested, if he would sell the Patent outright. Details of procedure for the organization of stock companies and corporations for the purpose of promoting a patented invention by manufacture and sale are too voluminous to be set forth here.

The majority of Inventors prefer to sell their Patents for a lump sum. To effect the sale the Inventor himself may well take the matter in hand or enlist the advice and executive ability of *someone personally well-known to him, or a person or firm with whom he has had dealings, and whose reputation for reliability is widely known.* The prospective purchaser must have the merits of the invention called to his attention, and, next to a personal talk with him, we regard properly-conceived correspondence as the best means. The correspondence ought to be *strictly business* in tenor and not burdened with immaterial matter. The Patent, if procured through us, will clearly set forth the invention in all its details of structure and function. Mail a copy thereof to each person or firm addressed, and enclose a stamped envelope for reply. In our judgment it is not well to set a price, but solicit offers and accept the best, if it is reasonable.

Advertising in papers of miscellaneous circulation such as dailies, and political, religious or family weeklies, we regard as of little or no value for effecting the sale of a Patent. Strictly technical or trade journals of the proper class are sometimes effective, but the cost is very heavy. Comparing results with outlay, the correspondence plan is undoubtedly the best, unless you can personally reach the party.

We will prepare for any Inventor desiring it a list of Manufacturers, compiled with careful reference to the nature of his invention. He can then personally or by letter bring his invention to the direct attention of those most likely to be interested. Our charge for this list is \$1. It is very important, in offering an invention for sale, to appeal to the right firms. This is *not* a "free" list, made up without regard to whether the firms named therein are interested in the manufacture or sale of your device, but, as above indicated, is for your special use and advantage.

It is bad policy to offer a Patent for sale before issue thereof. If Patent has issued the prospective purchaser is assured that the invention is new and

that you can give him a *bona fide* title. It amounts to the difference between offering that in which you have acquired actual title, and that in which your title is only prospective.

The strongest argument, however, against attempting sale prior to issue, is that by making your invention public you run the risk of being barred from the procurement of valid Foreign Patents, for, in the more important countries, any public knowledge whatever of the invention prior to filing applications in those countries, will invalidate Patent, even if obtained.

Good Patents for good inventions are always salable. Your invention must be worthless indeed if you cannot realize from it many times the cost of the Patent.

"A man obtained a Patent for a slight improvement in straw cutters, took a model of his invention through the Western States, and after a tour of eight months returned with forty thousand dollars in cash, or its equivalent.

"Another Inventor, in about fifteen months, made sales that brought him sixty thousand dollars, his invention being a machine to thresh and clean grain. A third obtained a patent for a printing ink, and refused fifty thousand dollars, and finally sold it for about sixty thousand dollars.

"These are ordinary cases of minor inventions embracing no very considerable inventive powers, and of which hundreds go out from the Patent Office every year. Experience shows that the most profitable Patents are those which contain very little real invention, and are to a superficial observer of little value."

Instances are numerous wherein the Inventor has made several millions of dollars from his invention. The Air Brake, the Sewing Machine, the Telephone and Telegraph, all involve broad principles, and the original Patents, as well as Patents for improvements, represent an aggregate value so vast as to be incalculable. The very simplest patented ideas, if novel, useful or entertaining, are quick and bountiful in cash returns. Dr. Higg's received over \$100,000 in cash royalties alone, from his United States and Foreign Patents for the little thimble you grasp in putting your umbrella up or down; the rubber tip for lead pencils was equally valuable. The common lace for women's gloves was invented by a woman and has yielded her a vast sum. The metal heel plate, and the toe tip of metal, for shoes, were each worth over a million.

USEFUL FACTS ABOUT PATENTS.

There are certain useful and important facts relating to the legal rights of patentees which most attorneys fail in their literature to set forth, and we give a number of such facts here for our patrons.

If an invention is protected by Patent in one country it cannot be manufactured in another country and imported, sold or used without license from the patentee.

The law requires that a manufactured article, if patented, must be so marked, and the customary manner of marking is to follow the word "Patented" by the date of the Patent. No legal right exists permitting the use of the mark "Patented" before the patent is actually issued. Official notification that an application for Patent is "allowed" does not therefore convey this right.

The law attaches a penalty of one hundred dollars for each offense for the fraudulent use of the mark "Patented."

If an application for Patent is on file but not allowed, the invention must bear the mark "Patent Pending" or "Patent Applied For," if manufactured and sold.

A license cannot be transferred unless the instrument itself embodied a stipulation making it transferable.

No one has the right to make a patented device without authority from the patentee, even though maker would construct the machine solely for his private use and not for sale.

After a Patent has expired it cannot be renewed, except by act of Congress.

A reissue is one granted to the original patentee, his legal representatives, or the assignee of the entire interest, when the original patent is invalid or inoperative by reason of a defective or insufficient specification, or by reason of the patentee claiming as his invention or discovery more than he had a right to claim as new, provided the error arose through inadvertence, accident or mistake, and without any fraudulent or deceptive intention. Matter shown and described in an unexpired patent, and which might have been lawfully claimed therein, but which was not claimed by reason of a defect or insufficiency in the specification, arising from inadvertence, accident, or mistake, and without fraud and deceptive intent, cannot be subsequently claimed by the patentee in a separate patent, but only in a reissue of the original.

(These facts relative to reissue of patents are set forth at length in view of the common mistake made by inventors in construing a reissue to mean an extension of the patent.)

A patent cannot issue to a deceased inventor, but to his legal representative.

Inventions of deceased inventors may be patented by the legal representative making application therefor in due form.

An abandoned application is no bar to a new application for the same invention by the same applicant.

When one of several distinct inventions described and shown in an application is not claimed therein, the issue of a patent on such application presumptively dedicates the unclaimed invention to the public.

After an applicant has himself prosecuted his application to final rejection and has then placed it in the hands of an attorney, the Examiner will be warranted in re-opening the case for the admission and consideration of substitute specifications apparently presented in good faith and for the purpose of securing for the inventor that to which the attorney believes him entitled.

One who employs another to make an invention for him does not thereby become entitled to apply for and receive a patent on the invention, whatever may be his equitable rights in the invention and patent of his employee.

Invention does not lie in an abstract idea of the desirability of uniting several old machines into one, but in conceiving definitely of a single organized and complete machine containing a combination of instrumentalities which perform the several functions of the old machine.

An application for a patent to be issued to joint inventors must be signed and sworn to by all the inventors and an application for such a patent made by only one of such inventors cannot be entertained even although the other of such inventors already has a sole patent for the same invention and refuses to join in a joint application.

Two may properly take out a patent as joint inventors when one of them originated the leading principles, and the other exercised inventive talent in perfecting it.

An inventor may adopt minor improvements in his invention, which are suggested by another, and the latter does not thereby acquire any interest in the invention.

The Patent Office cannot permit the record of an application once filed to be in any way altered by so radical a measure as the removal of one of its parts, as by the transfer of drawings, to a substituted application.

When all the parts of an application except the fee have been deposited in the Patent Office, they will not be returned to the applicant.

Patent will issue jointly to an assignee and applicant when the latter so requests in the recorded assignment.

An assignment regular on its face and regularly recorded must be considered an absolute assignment until cancelled upon the written consent of both parties, or upon the decree of a competent court.

In order to give an employer a right to an invention of an employee, on the ground that the latter was employed to invent it for the benefit of the former, it must very clearly appear that such was the condition of the employment.



THE WHITE HOUSE

If a person once conceives the main idea of an improvement, valuable minor results contributed by a workman in reducing the invention to practice without rejecting the original idea and proceeding upon a wholly distinct and separate plan, belong to the former as a part of his invention.

When all that is new and patentable in a device is embodied by an employee at the express direction of the employer and according to his ideas, the invention is that of the employer.

It is a well established principle that an inventor has the right to employ the mechanical skill of others to carry out his ideas without forfeiting his right to the invention.

An earlier conceiver, by merely making a model and showing it to some persons, afterward doing nothing more, does not give or abandon the invention to the world so as to deprive a subsequent conceiver of his right to a patent.

The prompt filing of an application is evidence that a reduction to practice was successful.

An inventor who, after reducing his invention to practice, deliberately conceals it from the public, is not entitled to a patent as against one who during such concealment has independently invented the same thing and has patented it in good faith and in ignorance of the fact of invention by the first party.

He who merely suggests that an invention may be made and furnishes the means to do it is not the inventor as against the mechanic who devises the practical method of making the invention.

He who employs an old device in a new or modified way to produce a new and useful result must be regarded as an inventor.

Where one is first to conceive an invention, but throws aside all evidence of the conception, makes no effort to complete or introduce the invention to the public, and delays making application for a patent until another has brought it into extensive use, has no standing as an inventor.

The law does not look with favor upon a party who withholds the knowledge of his invention from the public by a negligent postponement of his claim until others have made and introduced the same.

He is the real inventor and entitled to the patent who first brings the machine to perfection and makes it capable of useful operation, although others may have previously had the idea and made some experiment toward putting it in practice.

PERPETUAL MOTION.

The Patent Office refuses to grant patents on perpetual motion inventions, and will not even consider an application based on such a theory without a full-sized working model. Consequently we always advise our clients to file a caveat, in order to afford time to test and perfect their invention, and furnish a working model of their device before applying for patent. The Patent Office also holds these views in the case of airships or flying machines of the type which have no balloon or similar attachments, and contemplate creating power to provide for their own buoyancy.

DISTINGUISHED AMERICAN INVENTORS.

W. M. Jenne, of Ilion, N. Y., was a mechanic working by the day when he began to produce typewriting inventions. His ideas in this line have brought him wealth and he is now superintendent of a typewriter manufacturing company. To Jenne and C. L. Sholes—two men whose names are almost unknown to the general public—is chiefly due the development of the writing machines of to-day. Sholes, who died rich, began as a mechanic, and a universally known typewriter was to a great extent his creation.

Mergenthaler, who received millions from the linotype machine, was originally an expert mechanic, engaged in making telescopes and other scientific apparatus. His contrivance is now in use all over the world, the mechanical compositor having taken the place of the human typesetter in nearly all great newspaper offices.

L. C. Crowell was likewise a toiler at day's wages when he began to invent improvements in printing machines. His contrivance for folding, which brought him a large fortune, made possible the present enormous editions of many paged newspapers. Up to that time the lack of a folding device had set a limit on the output of the printing press, but now the Crowell folder takes the sheets as they receive the impressions, packs them into neat shape, and stacks them up all ready for distribution.

Frank A. Johnson was a mechanic in Minneapolis when he took out his first patent for a typesetting machine. His inventions in this line have brought him wealth.

The process of welding metals under water by means of the electric arc was not recognized at first as a great discovery. Its inventor, George P. Burton, was a mechanic, and every cent he could get hold of he spent on his idea, until, just as he had begun to despair, he sold a part interest in his patent for \$100,000.

Alexander P. Morrow was a mechanic employed by a bicycle company when he invented the coaster-brake which bears his name. Two hundred and fifty thousand of these brakes have been sold, and the royalty has made Mr. Morrow rich.

F. A. Flanagin had a little jewelry shop in Washington, but at length he devised a method of cleaning oil wells by dropping an electric stove down into them. Formerly, when such wells became choked with paraffin they were cleaned by exploding nitro-glycerine cartridges, which was a costly method and risky. The electric stove process, which is cheap and can do no damage, has made the inventor a rich man.

William Painter, of Baltimore, was a poor man. The notion of crimping a piece of metal around the neck of a bottle, to take the place of a cork, struck him, and he became well off. Many bottles nowadays have such caps.

Augustus Schultz, of New York, invented the modern method of tanning, which has reduced the process of making leather from an affair of a year or two to one of a few weeks, thus revolutionizing the business. All of the thin, tough leather manufactured nowadays is made in this way. When Schultz began his experiment he was so poor that, it is said, he had to prepare his solutions in tumblers. His invention made him rich.

Charles M. Hall was a student at Oberlin College when he discovered a solvent by which aluminum could be separated from its ore. Though the metal is very plentiful in nature, the difficulty was to part it commercially from other substances with which it is commonly found combined. Hall solved this problem, and his process, which is in use to-day, has made a fortune for him.

Charles J. Van Depoele, inventor of the under-running trolley, was a mechanic. Now, thanks to this and other ideas in regard to railroading, he is a rich man.

Emile Berliner was a clerk, and he paid a mechanic fifty cents a night to teach him something about electricity. The teacher was very ignorant of the subject, and that was one reason why Berliner was led off the beaten track. He began to make discoveries, and finally he evolved ideas which made the long distance telephone possible, the Bell apparatus being good only for short distances. The monopoly of the Bell company is now held under the Berliner patents, and the ambitious clerk is well to do.

Thomas L. Wilson, of New York, was a dabbler in experimental chemistry. He hit upon a cheap method of making carbide of calcium, which up to that time had been known only as a laboratory product, and the discovery has brought him wealth, calcium carbide being the source of acetylene gas.

Dr. Bell, the telephone man, was a school teacher. He took the first working model of his telephone to John A. Logan, and offered him a half interest for \$2,500, saying that it would do away with the telegraph, and that

there were millions in it. Logan said: "I dare say your machine works perfectly, but who would want to talk through such a thing as that, anyway? I advise you to save your money, young man." Telephone stock is worth to-day \$80,000,000 or some such sum, and Bell got several millions of the money. He offered a tenth interest to an Examiner in the Patent Office for \$100. It was refused. The tenth was worth \$1,600,000 within 15 years.

Edison was a telegrapher when he made his first important invention. He took it to a company on Broadway, New York, and the manager told him he would pay \$36,000 for it and not a cent more. The future wizard was astounded, never having thought of receiving such an immense sum. He feared the check might be bogus, and was sure of it when the paying teller refused to cash it offhand. However, when he secured identification the money was handed to him. It was the greatest day in Edison's life, and, though he has received millions since then for his ideas, he has never been made so happy by a subsequent success.

Hugo Cook, of Dayton, Ohio, was a worker for wages in that city when he made the invention upon which one of the most efficient cash registers in the market is based. He receives a royalty of \$2 apiece, and enough are sold in a year to give him an income of about \$25,000.

W. L. Bundy was a watchmaker when he invented the workman's time recorder, which is now coming into use all over the world for the purpose of keeping "tab" on employees in factories and other business establishments. Large capital has been invested in the contrivance, and Mr. Bundy is a rich man.

Westinghouse, who invented the air brake, was a machinist. His idea was worth millions to him.

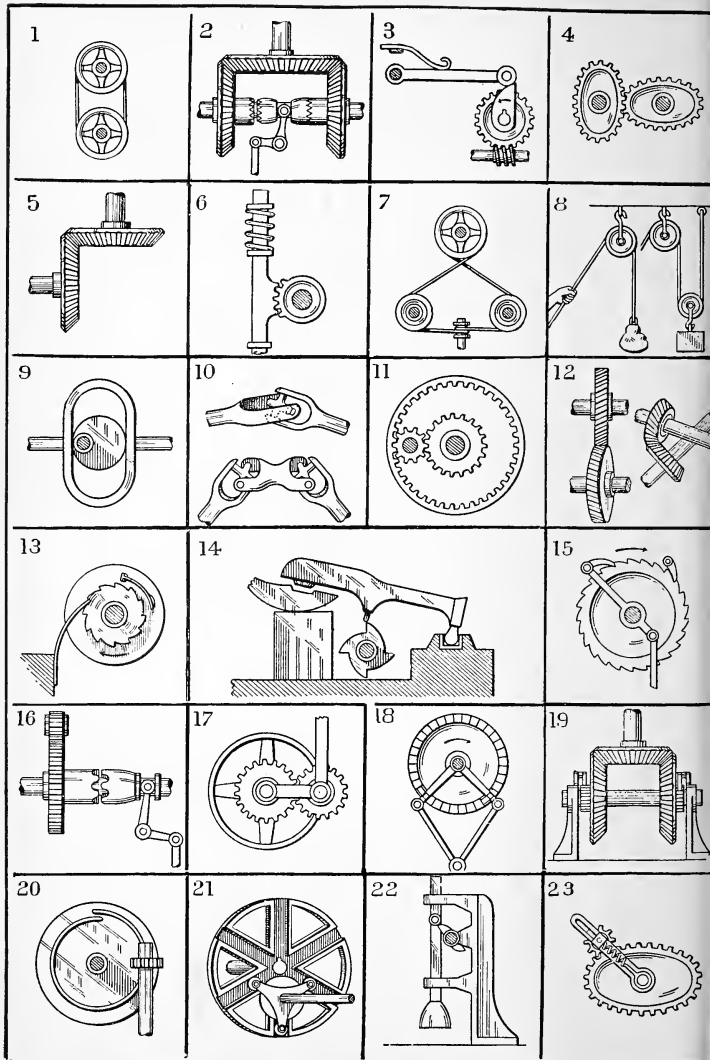
Gramme, a Belgian, who invented the ring dynamo, was a carpenter by trade, employed in the making of models for electric machines. He could hardly read or write, but he bought a dictionary and book on electricity and tried to teach himself. His invention revolutionized the manufacture of dynamos, brought him a fortune and made him famous.

Of course the foregoing are but a few of numberless instances showing the opportunities open to those in every walk of life, who are alert to the spirit of progress now moving the whole civilized world. Many an humble toiler has been raised from comparative poverty to plenty, or from a modest income to affluence by a fortunate exercise of the inventive faculty. Good inventions never found a more ready market or at higher prices than obtain to-day, and rich opportunities are open to those of every age and sex.

MECHANICAL MOVEMENTS.

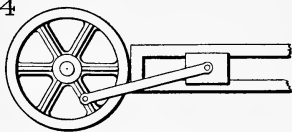
Every mechanic or inventor should study to avoid clumsiness in the construction of his model or machine and so arrange the several parts as to produce the result desired with the least number of parts possible. He should, therefore, be very careful to select as far as possible the simplest and best forms of mechanical movements. For this purpose we have compiled together in a compact manner a large number of the most practical, simple and inexpensive mechanical movements such as are most generally used in all classes of machines. Among them the mechanic or the inventor may find at a glance just such a movement as is best suited for his purpose, and may find the several parts best adapted for any special combination of mechanism. The following is a brief description of the various movements as numbered:

1. Pulleys with a belt passing thereover.
2. The ordinary sliding clutch and pinions.
3. Means for imparting a jumping motion to a horizontal arm. A cam secured to a cog-wheel alternately lifts and drops said arm.

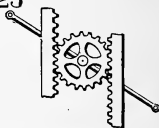


4. Elliptical spur-gear for securing variable speed.
5. Beveled gears.
6. Means for imparting an alternate rectilinear motion to a rack-rod by a continuously rotated mutilated gear.
7. Means for transmitting motion from one shaft to another, said shafts being in the same plane, but at right angles to each other.
8. Pulleys for lifting weights.
9. An eccentric upon a revolving shaft adapted to impart a reciprocating movement to a yoke strap.
10. Two forms of universal joints.
11. Differential gears. The inner and outer gears move in opposite directions at different speeds.
12. Different kinds of gear for transmitting rotary motion from one shaft to another arranged obliquely thereto.
13. Means for imparting a partial revolution to a ratchet-wheel at the completion of each revolution of the main wheel.
14. A tilt hammer. The wiper-wheel lifts the hammer four times each revolution.
15. Means whereby a reciprocating rectilinear motion of a vertical rod transmits an intermittent circular motion to a toothed wheel.
16. An ordinary sliding clutch and pinions.
17. Sun and planet motion. The outer gear is fixed to the connecting link and moves around the axis of the fly-wheel.
18. Means whereby the reciprocating motion of a jointed rod produces an almost continuous rotary movement of the ratchet-face wheel.
19. Gearing for transmitting a continuous rotary motion to a vertical shaft from a horizontal shaft, by the alternate revolution of gears upon said horizontal shaft. These gears are loose upon their shaft, and have ratchets which are engaged by pawls fixed to the shaft.
20. Means for transmitting rotary motion from one shaft to another at right angles thereto.
21. Multiple gearing. The triangular wheel drives the large one.
22. A simple ore stamper or pulverizer. The plunger is raised and dropped twice for each revolution of the shaft.
23. Variable rotary motion produced by uniform rotary motion.
24. Ordinary crank motion.
25. Air pump; piston motion. The racks are moved in opposite directions by the revolution of the gear.

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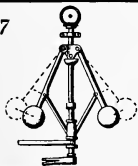
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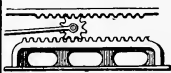
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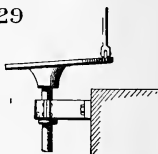
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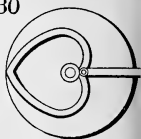
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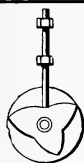
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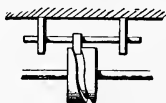
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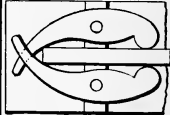
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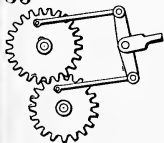
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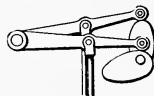
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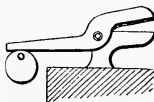
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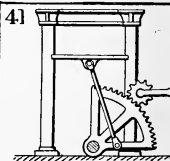
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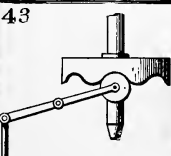
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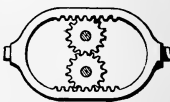
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26. Crank motion. The wrist-pin upon the disk works within the slotted yoke. 11

27. Centrifugal governor for steam engines, etc.

28. A lower fixed rack having a gear mounted thereon and meshing with an upper movable rack. As the pitman secured to the gear reciprocates, said gear revolves and imparts a movement to the upper rack which is double that of the gear.

29. Means for imparting a reciprocating rectilinear motion to an upright rod by rotating an upright shaft having an oblique disk secured thereto.

30. A heart-shaped groove engaged by a lever, is adapted to impart an irregular swinging motion to said lever.

31. A triple cam adapted to lift the rod three times at each revolution of the disk to which said cam is secured.

32. Means for producing a uniform reciprocating rectilinear motion by the rotary motion of a grooved cam.

33. A carpenter's bench-clamp. By pressing a strip against the crossed ends of the dogs, the rounded heads thereof will clamp said strip.

34. Means whereby a reciprocating motion is imparted to a frame by a continuously rotating shaft. This shaft has three wipers adapted to contact with inwardly extending arms within the frame.

35. Means whereby the rotation of two spur gears having crank wrists produces variable alternating traverse of a horizontal bar.

36. Means for converting uniform circular motion into alternating motion. Cams are mounted upon a revolving shaft and alternately lift and drop levers to which are attached rods.

37. An ellipsograph. By attaching a pencil or other instrument to the cross-bar ellipses may be readily drawn. Studs upon the bar engage the grooves.

38. A fiddle drill. A strap is secured between the ends of a bow and encircles a shaft or drill which is revolved by the back and forth motion of the bow.

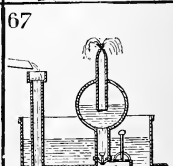
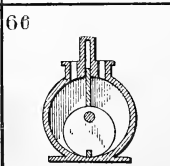
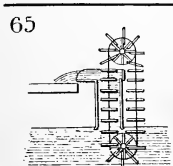
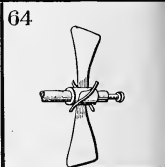
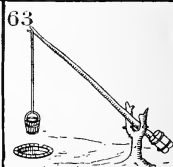
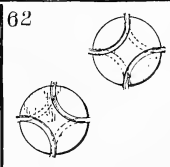
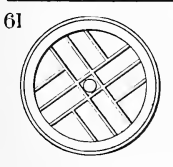
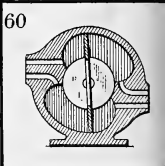
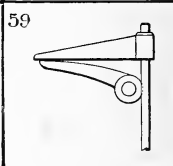
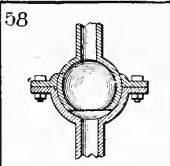
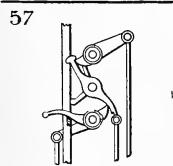
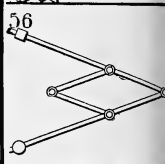
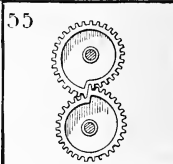
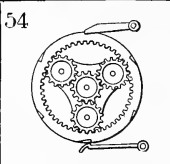
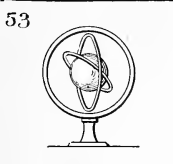
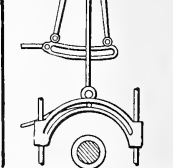
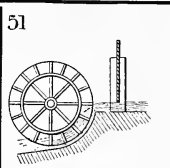
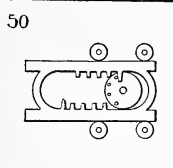
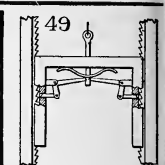
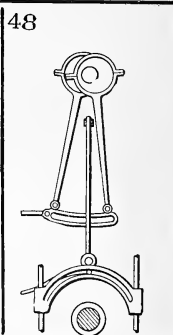
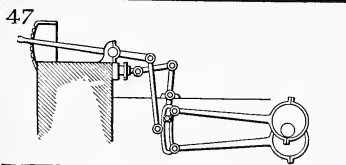
39. A crank substitute. Two loose pinions with reverse ratchets are attached to the shaft, with pawls on the pinion ratchets. Each rack meshes with the reverse pinion for continual motion of the shaft.

40. Metal shears. The arm of the moving blade is raised and lowered by the revolution of the cam.

41. A vertically movable presser platen. This platen is secured by a rod to a toothed sector pivoted within a frame and which receives motion from a small pinion meshing therewith.

42. Means for converting circular motion into variable alternating rectilinear motion. A wrist-pin upon a revolving disk works within a slotted lever.

43. Means for converting circular into rectilinear motion. A waved wheel mounted upon a rotary shaft rocks a lever upon its fulcrum.



44. "Lazy tongs." A system of crossed levers pivoted together by which the amount of a rectilinear motion is increased by the proportional number of sections in the tongs.

45. A rack adapted to receive rectilinear motion by the rotary motion of toothed wheels meshing therewith.

46. Means for converting reciprocating rectilinear motion into intermittent circular motion.

47. Link motion for locomotives. The slotted link is moved up and down over the wrist pin block by the lever and connecting rod; the lever, locking in the toothed sector, allowing for a close connection to the valve stem by a lever and short connecting rod.

48. Valve motion and reversing gear. The slotted link receives a rocking motion from the eccentrics and rods, and is thrown from its center either way for forward or back motion of the engine by the lever secured thereto.

49. Safety stop for elevators. When the cable breaks, the bow spring will force the plungers secured to the bell-crank levers outward into engagement with the racks.

50. Mangle rack, guided by rollers and driven by a lantern half-pinion. The long teeth in the rack act as guides to insure a tooth mesh at the end of each motion.

51. Breast wheel. The power of this wheel equals about forty per cent. of the value of the waterfall flowing through the gate.

52. Single acting pumping beam. Parallel motion is received from a sector beam. The cylinder is open and the piston is lifted by the weight of the pump rods on the other end of the beam. Movement of the piston is reversed by atmospheric pressure.

53. A gyroscope or rotascope. The outer ring is fixed to a stand. The intermediate ring is pivoted vertically therein. The inner ring is pivoted in the intermediate ring at right angles thereto and the globe is pivoted at right angles to the inner ring.

54. Wheel work used in the base of a capstan. The central gear is fast to the shaft. The intermediate pinions are loosely mounted upon a frame secured to the drum. The gear ratchet ring runs free on the shaft.

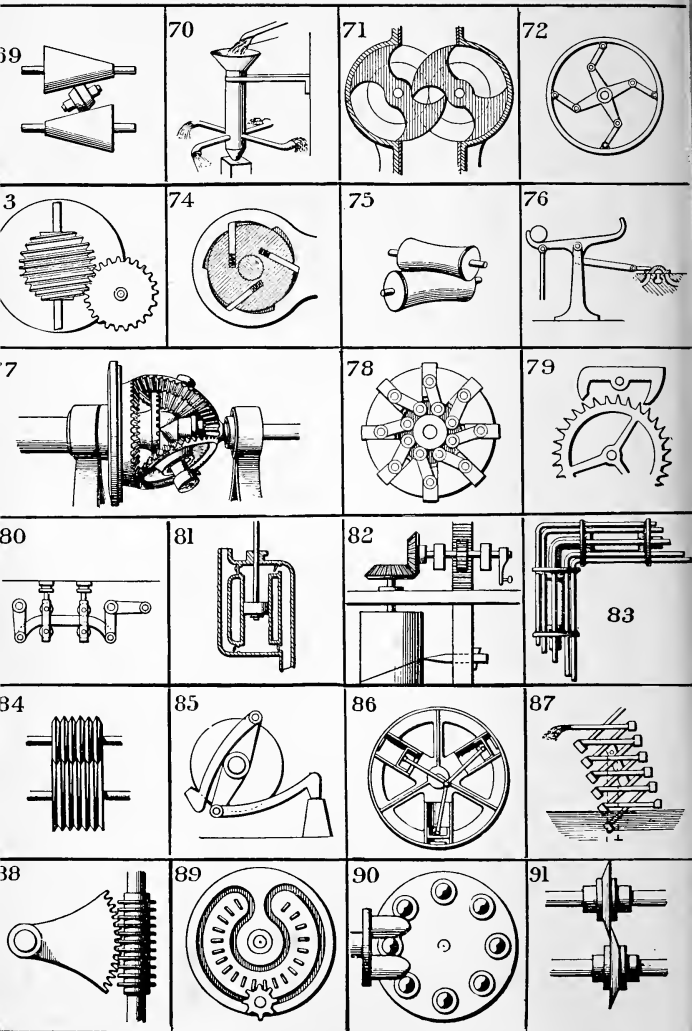
55. Scroll gears. For increasing or decreasing the speed gradually during one revolution.

56. Pantograph. For reducing or enlarging copies of drawings. The free ends of the arms are provided with drawing instruments which are adjustable. The point of connection between the two intermediate arms is fixed.

57. Diagonal catch and hand gear used in large blowing and pumping engines.

58. Ball and socket tube joint.

59. Toe and lifter for working puppet valves in steam engines. The lower arm or toe is secured to a rock shaft operated from the engine shaft and is adapted to raise and lower the lift or upper arm which is secured to the valve rod.



60. A rotary engine. This engine has two abutments and two inlet and exhaust ports.

61. A horsepower tread wheel. The horse is placed below the shaft and between the spokes which are arranged at the sides of the wheel.

62. A four-way cock.

63. A swape, or New England sweep. The weighted end of the pole overbalances the bucket so as to divide the labor of lifting the water.

64. Ordinary screw-propeller.

65. Chain pump.

66. Rotary engine, in its simplest form.

67. Hydraulic ram. The "Montgolfier" idea for a fountain supplied by a water ram.

68. Means whereby rectilinear motion of variable velocity is imparted to a vertical bar by turning a shaft having a curved slotted arm thereto.

69. Friction gear. Variable speed is obtained from the pair of cone pulleys, one of which is the driver. The intermediate double-faced friction pinion is moved from one end to the other of the cones.

70. Barker wheel. The reaction of the water escaping from the tangential orifices at the ends of the arms under the pressure of the water-head in the hollow shaft gives impulse to the wheel.

71. "Root" rotary blower. The extended surface of the periphery of the wheels allows them to run loosely in the shell without friction and with very small loss by air leakage.

72. An elastic wheel having a steel spring tire with jointed spokes.

73. Globoid spiral gear wheels. The revolution of the globoid gear gives a variety of differential motions to the spur gear, as it swings between the limits practicable with the globoid teeth.

74. Ratchet head with spring pawls.

75. Means for transmitting rotary motion to an oblique shaft by means of contacting drums having concave faces.

76. A reversing movement for a pump valve. The piston rod trip carries the ball frame beyond the level, when the ball rolls across and completes the valve throw.

77. Multiple speed gear in line of shaft. The small intermediate gear is secured to the small shaft. The central intermediate gear is secured to the large shaft, while the large intermediate or end gear is fixed to the bearing. The side beveled pinions are revoluble with the large shaft. With this device speed may be increased or decreased on a continuous line of shafting according to the relative number of teeth in the different gears.

78. Toggle joint cam movement, for throwing out a number of grips at once, by the movement of the jointed ring within the disk.

79. Anchor escapement for clocks.

80. Cam bar valve movement. The horizontal movement of the cam bar by the bell crank lever alternately moves the two valves.

81. Double acting lift and force pump.

82. Rack and pinion movement for bracing spiral grooves on a cylinder.

83. Right angle shaft coupling. A number of right angle steel rods move freely in perforated guide flanges on the ends of shafts that are arranged at right angles. In this manner motion may be imparted from one shaft to the other.

84. Grooved friction gearing.

85. Revolving rapid blow hammer.

86. Rotary multi-cylinder engine. The cylinders revolve with the fly-wheel and the crank to which the pistons are secured is eccentric thereto.

87. Pendulum water lift.

88. Means whereby rectilinear vibrating motion may be imparted to a spindle having an endless worm gear, by a spur-gear sector.

89. Mangle wheel with equal motion forward and return. The end of the shaft of the pinion is slidably mounted within the groove and retains said pinion in mesh.

90. Tin-tooth wheel and pinion.

91. Disk shears.

WHAT TO INVENT

In presenting the following suggestions to inventors, we make no pretense whatever, nor would we wish inventors to understand that no patents have been granted in the classes named. What is particularly wanted are devices which in themselves possess superior merits to those in common use.

1. An automatic self-inking proof roller.
2. Devices for conveniently keeping record of telephone messages sent.
3. White indelible ink, for marking black clothing, would find a ready sale.
4. A practical self-inking type-writing machine, dispensing with carbon ribbons.
5. A blotting substance of increased absorbent nature which is better than blotting paper.
6. A substitute for tar or metal as a roofing material. Cheap, durable and water proof.
7. A new and perfect artificial fuel, compounded from natural products, and cheaper than coal.
8. A device for quickly and effectively cleaning hair brushes. Also toilet articles of general use.
9. New systems of house heating and ventilation are in demand. No perfect system is yet in use.
10. A practical automatic cut-off safety gas cock, whereby the flow of gas is permitted only when lighted.
11. A process and apparatus for drawing electrical energy from the atmosphere and storing it for use.
12. Means for breaking cars and other vehicles which will be quick-acting, and will not "flat" the wheels.
13. A practical device for regulating incandescent electric lights which can be turned partly off or on like gas.
14. Type-setting and casting machinery on the plan of the "linotype," but more simple and easier in operation.
15. Improved electrical conductor, lessening resistance to the current and loss thereby by leakage and radiation.
16. A noiseless typewriting machine is greatly needed. All workers in modern offices will appreciate this invention.
17. Fashionable confectioners want a box which cannot be repacked with confections of an inferior grade without discovery.



18. A tough transparent substitute for glass, which will not crack under a high degree of heat, and will withstand a great strain.

19. A perfect fire-proofing compound, which will not injure the materials to which it is applied, and which is safe and inexpensive.

20. An improvement in doors similar but superior to the "revolving door," which has been a financial success, but has some objections.

21. Improvements in key action, carriage movement, ribbon and other parts of writing machines, to cheapen the cost and enhance speed and accuracy.

22. A simple cork extractor which will not break up the cork and cause portions of the latter to fall into the bottle will satisfy a general demand.

23. A simple and effective coffee mill for domestic use, provided with means for regulating the degree of fineness to which the coffee is ground.

24. Improved machinery and apparatus for curing, stripping and packing tobacco. The present methods require much space and great loss of time.

25. Special machinery for shoe-lasting, book-binding, metal-working, and other purposes. Improvements upon machinery in general use are often very valuable.

26. A safety envelope that cannot be opened without detection is greatly desired. There are some inventions in this line, but there is still room for improvement.

27. An invention for holding up a lady's skirt when walking in the street would be highly appreciated by the ladies, especially if they are encumbered with bundles.

28. A more sensitive and accurate diaphragm for telephones, phonographs and similar instruments, whereby the sounds produced will be clearer, louder and more natural.

29. Journals for car and other axles have been much improved, but "hot boxes" are still of frequent occurrence. Improved metals for anti-friction bearing can be patented.

30. A preserving compound for wooden piles is desired on the Pacific Coast that will make piles immune from the attacks of teredos and other form of destructive marine life.

31. A wash-board with soaping apparatus or means embodied therein, and so arranged that the soap would be applied by the action of rubbing, would be a profitable invention.

32. Ingenious articles of utility formed of wire bent from a single piece, and therefore extremely cheap. This applies particularly to household and store fittings and simple implements.

33. An ink bottle which will permit of the insertion of a pen point therein, will provide a regular depth of dip for the pen point, and will prevent the evaporation of ink contained in it.

34. An improvement in printing presses to do away with the necessity for an elaborate make-ready. Much time is lost in overlaying and underlaying forms that would be saved by such a device.

35. An invention is desired which will make a horse secure on his legs on slippery pavements.

36. New construction of boats and methods of boat propelling. Something better than paddle wheels or screws. Water drawn in at the bow of the vessel and forcibly expelled at the stern has been tried.

37. A better type of fixed ammunition for rapid-fire guns is greatly desired. We would suggest a caseless charge compressed in the form of a solid cylinder and attached in some manner to the base of the projectile.

38. A safety stirrup, one that would be so arranged by a spring or otherwise that instead of holding the rider's foot when a horse falls, the weight of the rider pulling backward or downward would cause the release of the foot.

39. Why cannot a system of bundle carriers, such as are used in dry goods stores, be devised for public restaurants? The advantages of such a system are many, and would effect a great saving of time and labor.

40. An automobile street sweeper is also desired—one that will sweep the dust direct from the street into a dust bin carried by the machine where it could be dampened, thus causing no dust to be thrown out during its operation.

41. New labor-saving means in washing, wringing, drying and ironing clothes would be profitable and should have a ready sale in the market. Laundry improvements, when properly protected, are always appreciated and have a quick sale.

42. New compositions of matter. Dye-stuffs are patented in great numbers, and some very valuable. Mere prescriptions can not be patented, but new chemical compounds, such as phenacetin, are patentable, and often yield great profits.

43. Improvements in apparatus for generating and using acetylene gas are now especially wanted. This gas has been proved a valuable illuminating medium, and simple means for safely generating and storing and using it are valuable.

44. A practical crude oil burner. There are two main lines of invention in this class. One is for supplying the oil mixed with steam for combustion, and the other is for turning it into vapor and mixing it with air, burning it in that form.

45. A motor plow that could be easily handled and operated would revolutionize existing agricultural methods. Besides the motor plow there are other farm implements where the principle of the automobile could be applied to advantage.

46. There is a great demand for an automatic telephone exchange, by means of which connections will be made automatically, greatly facilitating the service, and doing away with salaries of large numbers of persons usually employed at the exchange. Recent experiments of Dr. Pupin have demonstrated that the Trans-Atlantic telephone is feasible. Quadruplex machines will also come in time, and it may be as easy to send four or five messages over a single wire by the telephone as it is by the telegraph now.

47. A storm-proof cover and sun-shield for standing crops, such as choice garden products. A cover which is cheap and simple, and can be easily manipulated. Hundreds of thousands of dollars worth of crops are destroyed by the elements annually.

48. The need of a practical spark and cinder arrester for use on railway locomotives is apparent to all who travel, as frequent fires are ignited by the sparks, and the cinders have a disagreeable habit of making known their presence in various ways.

49. An apparatus for utilizing the great cold producing power of liquefied air to cool houses in summer. The time may not be far distant when houses can be provided with an ice plant or cooling room which will be operated by simply turning on a spigot.

50. A bottle for containing mucilage which is so constructed that when the brush is in place a complete closure of the upper end of the bottle will be effected, and which will prevent the gumming and sticking of the brush to the inside of the neck of the bottle.

51. A bottle or stopper therefor so constructed as to prevent the bottle from being filled a second time. Manufacturers of proprietary compounds, liquors, perfumery, sauces, etc., are on the lookout for something practical of this kind which can be manufactured at a small cost.

52. Another field which has not been successfully exploited is the shucking of oysters and clams. Any simple mechanism for accomplishing this object would, in all probability, prove an immensely valuable invention, as the present hand work is necessarily slow, tedious and expensive.

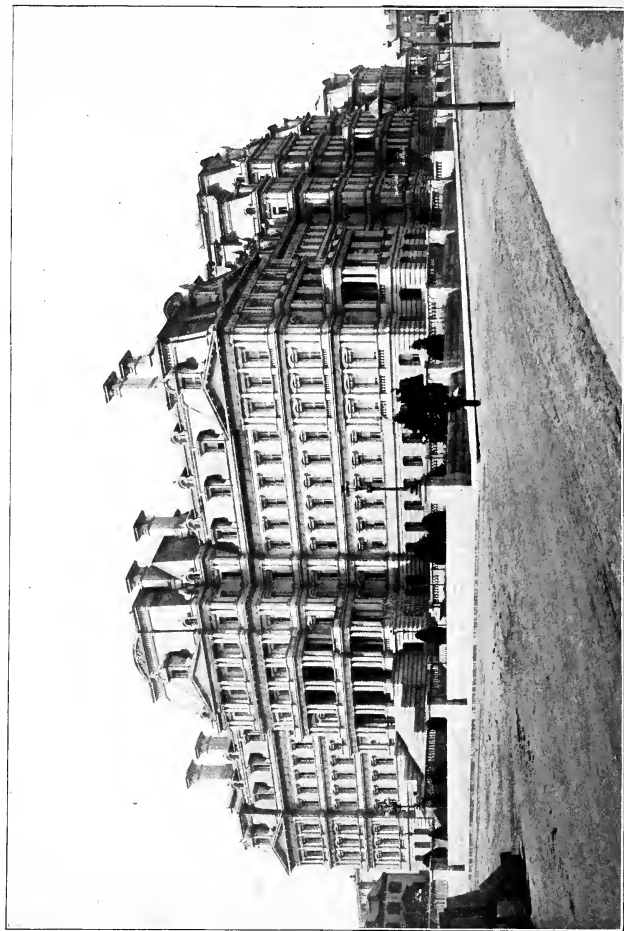
53. Removing coke from ovens. Perhaps the most serious drawback to the production of coke is the apparent impossibility of removing the coke from the oven without cooling the oven. The process now employed of cooling the oven with water generates steam which affects the structure of the oven injuriously, and materially lessens its usefulness and durability. A practical process for removing the coke without cooling the oven will be an invention of unusual value, as it will save thousands of dollars annually to the coke industry.

54. An automatic stoker to replace firemen on locomotives is sure to be adopted in the near future.

55. An electric flat iron, so constructed that it could be heated by electricity and propelled by it, but controlled by the hand of the user, would be a blessing to thousands of hard-working housekeepers who do their own ironing, and to all laundry workers.

56. A machine which will pull or throw up beets and other like products out of the ground and top and clean the same, would also be a valuable invention. Such a machine might resemble a self-binder or analogous harvester, and should include mechanism to withdraw the beets or other products from the ground, convey them upwardly by means of an endless belt, in accurate position, to knives or cutters where they could be chopped, and from the knives or cutters pass through a cleaning apparatus or means.

57. An economical means of absorbing the vibration of both electrical and steam motors in automobiles is a desirable invention. This means should be light in weight and inexpensive. The vibration of the motors in automobiles tends to rock and strain the bodies of the latter, and at present cumbersome vehicle constructions are necessary to withstand the wear and tear. Means



THE UNITED STATES WAR AND NAVY BUILDING

for muffling the noise or sound emanating from automobile motors is also desirable. Means for condensing exhaust steam in locomobiles without obstructing or retarding the exhaust, and to automatically relieve such means of the water of condensation, either by exterior outlet or returning it to the boiler or feed pipe. An absolutely safe structure to prevent explosion or injurious results due to the use of vapor or gasoline engines or motors in locomobiles, such as thermal or heat controlled vents, valves and similar devices in conjunction with the vapor or gasoline supply tank and cylinders.

58. In order to cheapen the manufacture of acetylene gas, some means will have to be discovered for economically producing magnesium carbide, to compete with calcium carbide now commonly used, and from which less gas can be produced than from a corresponding quantity of magnesium carbide. Those inventors who operate in the field of chemistry will find it profitable to experiment in an economical production of magnesium carbide.

59. The man who invents a really practical corn husker which will husk standing corn is assured of a fortune. As in the case of the trying work of picking cotton, but little help has been given to the farmer by the inventor. Numerous attempts have been made, but none of the machines constructed have proved practicable. One of the latest is a combination of the corn binder and the husker and the shredder, which is attached to the ordinary farm wagon. The fingers of the husker collect the stocks and convey them to the rollers of the shredder, where the husks are removed and the ears elevated to wagon box. The principle seems to be all right, but the practicability of the machine is yet to be demonstrated. Some day the successful machine will appear.

60. A cotton picker to replace the ordinary methods of picking cotton by hand is desired by cotton raisers, and if a successful machine of this class is produced the inventor will receive a well-merited income therefrom.

61. A telescopic or folding umbrella, that can be easily and quickly reduced to complete form and when folded will not be cumbersome and bulky, would be a valuable and most profitable invention. Many attempts have been made to accomplish this result, but such complex and expensive structures have always been presented in the known folding umbrellas that they have been of small commercial value.

62. A prize of 1,000 francs (\$163) will be given the inventor who shall produce a glove that can be used by electrical workmen to safeguard them from accident. The premium is offered by the French "Accidents to Workman Assurance Association." The conditions are that the gloves must cover the forearm as well as the hands; that they must be light, and leave the utmost liberty to the worker. If none of the devices submitted come up to the required standard, the prize will be divided among those inventors who most nearly approach it.

63. A bottle containing poisons having a practical device for attracting the attention of those handling the same, or to indicate by some means that its contents are of a poisonous nature, is in demand. The device or structure for notifying the user of the dangerous character of the contents of the bottle can be applied either to the neck, body, or stopper of the bottle, but in devising such indicating means care should be taken to avoid cumbersome or impracticable structures.

64. The use of aluminum for the manufacture of small articles, such as spectacles and eye-glass frames and the like, is prohibited by reason of a failure to successfully solder separate aluminum parts to complete a full organization of members of such devices. In the arts generally the use of aluminum is also prohibited where it is necessary to connect separate parts by reason of a lack of a proper solder for this purpose. The inventor who discovers an economical means of soldering aluminum will reap a considerable fortune.

65. Owing to the destruction of pasturage, cereal crops generally, and growing vegetables, by prairie dogs, gophers and similar small animals, serious havoc has resulted from the inroads of these pests. Attempts to practically exterminate them have failed. An economical method or means for this purpose would be very valuable. The extermination of these pests can be effected, in all probability, by some yet undiscovered simple destroyer, either of a chemical or mechanical nature.

66. Find a substitute material having all the characteristics and advantages of yieldable India rubber and your fortune is made. Owing to the enormous consumption of this substance, the expense of commercial production and the rapidly growing scarcity of the natural product, due to the reckless destruction of trees and plants which are the source of the same, the rubber output is becoming diminished, and its commercial value correspondingly increased every year.

67. Many devices and various kinds of apparatus have been produced for extinguishing fires in the holds of vessels. This field of invention is still ripe, however, for the harvest of fertile brains of inventors, and a simple effective extinguishing means of a comparatively inexpensive nature that will not obstruct the capacity or operate in a manner to contaminate the cargo of the hold of a ship will result in a magnificent remuneration to the fortunate inventor who discovers the same.

68. There is a demand for a painting machine of simple construction, embodying a gang or series of revolving brushes operated by electricity or direct mechanical means or by compressed air, and to which the paint may be fed by a conduit running to a supply tank or receptacle. If compressed air be the operating means the paint from the source of supply could be forced upwardly to the brushes by such air, and moreover the application of the paint to a surface of a building or other device could be more evenly spread by compressed air.

69. A simple and absolutely reliable spring cushion device or analogous buffer to prevent accidents and loss of life from falling elevators is wanted. A magnetic check, automatically energized by a pre-determined slack in the cable through the medium or intermediate device, would also be advantageous as a safety device for an elevator. There is also room for improvement in automatic closers for elevators. In this class of inventions, the usual disadvantageous forms of dumb-waiters might be replaced by more economical and practical structures, and numerous automatically operating devices, both mechanical and electrical, could be devised for raising and lowering such waiters.

70. A very convenient and profitable invention would be an automatic signal to notify icemen, grocers, butchers, milkmen, or other tradesmen when they are wanted. Such a signal might be located at the front of a residence and operated from the interior of the latter, so that the tradesman desired could see the same in passing and take an order without requiring any one in such residence to go to the place of business of the various tradesmen.

71. New principles in cash registering means and purchasing indicators are always in demand and anxiously sought by the manufacturers of cash registers. Cash registers as now manufactured are more or less expensive and embody complex features. A departure from the ordinary methods of cash-registering constructions with quick, practical results and efficiency, would be a source of substantial income to the fortunate inventor devising and protecting the same.

72. An improved method or means of exterminating flies, roaches and other similar pests in houses, hotels and restaurants is greatly desired. The means now employed are rarely effective and are frequently of such an extremely poisonous nature as to be dangerous in their use. Within this same class of invention, practical means of exterminating mosquitoes is also desired, particularly in view of the fact that recent experiments have demonstrated that mosquitoes spread the germs of malaria, yellow fever, and kindred diseases.

73. A practical household ice machine in connection with a refrigerator which could be operated by a water or other similar motor, would be a valuable invention. In devising a machine of this class it is suggested that means be provided for producing the ice directly in the refrigerator and if some inexpensive chemical or electrical means for this purpose is discovered a long felt want will be supplied.

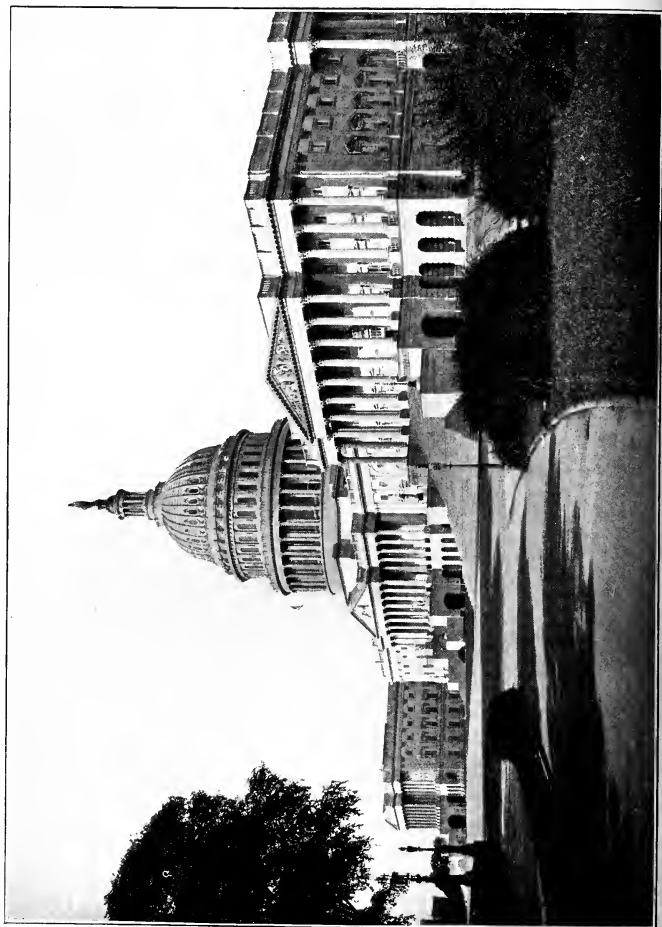
74. A practical, cheap and efficient pocket match box, which will be constructed and operated by simple manipulation to deliver one match at a time, would be a most valuable acquisition to this class of devices. There is a demand for an improvement in the usual form of match boxes, in view of the fact that those that have heretofore been devised were of such a complex and expensive nature that they had but a limited commercial value.

75. A boot blacking machine for effectively polishing the parts of a boot or shoe and operated by the nickel-in-a-slot principle, is wanted and would be a profitable field of invention in which to enter. Such machine would have to include a motor and mechanism for applying and rubbing on the polish, and might be in the form of brushes or textile bands, or both.

76. If incubators are made that are mechanically regulated and held to a given degree of heat, with an electric bell to call when there is need of attention, why cannot a cook stove be produced on the same plan? This stove should contain a series of ovens controlled by thermometers and equipped with a simple electrical appliance to call when there is danger. The heat in one oven could be regulated to cook meat, eggs and other albuminous foods; another oven to be regulated for boiling purposes. In another, the heat could be regulated for baking bread, etc.

77. Printing without type. Not only has this been accomplished by the inventor of this system. Mr. Friese-Green, but he has actually succeeded in printing in colors without the use of any pigment whatever. This process is accomplished through the use of electricity and can be applied to any press, it being only necessary to remove the ink roller. This invention opens up an endless field of invention.

78. There is a great demand for a practical wall papering machine. By this is meant machines that are readily portable and to which the paper may be easily applied and delivered therefrom to walls or ceilings by a simple operation. A machine of this character, embodying features to permit the operator to stand at a distance from the wall to be covered and dispose the machine at the proper angle to the wall or ceiling as to obtain a square application of the paper will solve this problem.



THE UNITED STATES CAPITOL

79. A practical musical instrument which shall produce orchestral music, including the representation of a violin, cornet, trombone, flageolet, flute and piccolo, bass viol, snare and bass drum, leaving the expression of the music under the control of the operator. Also, in connection with such instrument, a machine for preparing perforated sheet music with which to operate the musical instrument.

80. Many attempts have been made to practically cool and ventilate cars by replacing vitiated air with successive or continuous charges of fresh air from the exterior. Some of these have been more or less successful, but in the present systems, under the most favorable circumstances, the apparatus used materially adds to the expense of the car equipments, and in some structures the thorough ventilation and cooling of a car is not effected equally throughout the interior area.

81. Inventions for the utilization of waste products, or by-products, resulting from the treatment of various articles or commodities in manufacturing, are always successful if practical and meritorious. For example, the numerous so-called "waste products" of the packing houses of Chicago and other places are turned to account, and are probably as profitable as the meat or principal product. In the same manner waste and by-products of soap factories, dye works and numerous other establishments are utilized and made sources of profit. Inventions resulting in the utilization of such common waste products as ashes, furnace slag, sawdust and oyster shells, cannot fail to prove successful on the market.

82. The utilization of the sun's rays for mechanical purposes is now actively engaging the attention of inventors. The most practical apparatus up to the present time is one recently tested in Southern California. It consists of a large reflector in the shape of an umbrella with the top cut away. The inner surface is lined with numerous small mirrors, which concentrate the sun's rays and direct them upon a boiler located within the reflector.

83. After centuries of use, the cork-closing bottles are passing slowly away, and rubber, metal, glass, pasteboard and pulp coverings are taking the place of cork. Success awaits the inventor who hits the popular taste for a cork substitute. Fruit jars have long had patent tops, beer is seldom sold in any other way; and milk is now put up in bottles that have little covers of metal. Citrate of magnesia bottles have now a special stopper of their own. Rubber corks are made in great quantities, and glass tops to ordinary corks are made for the high-class drug and perfume trade. The mechanism now coming into use for the soda and beer bottles, and fruit jars as well, is the eccentric one in which a double wire loosely clasping the neck of the bottle, when pushed up, raises the stopper cleanly and easily.

84. There is a large fortune in store for some energetic inventor who will devise a bob-sled or the like having practical means of propulsion controllable within the confines of the body of the sled and departing from the usual gripping or traction wheel devices heretofore invented for this purpose. A valuable feature of construction in automobile sleds would be means for practically ascending grades or hills by step movement, and also to have the propulsive or operating mechanism capable of being thrown out of contact with the surface over which the sled is moved to adapt the latter to descend grades by its own momentum. Reliable steering devices for a sled of this class would also have to be provided.

85. Sooner or later the faithful tow-path mule will be emancipated. Attempts have been made to propel canal boats by the trolley system, but thus far without complete success. Two obstacles must be overcome before practical success is reached. One is the provision of means for maintaining the trolley in effective contact with the conductor, and the other the prevention of "side wash" or undue disturbance of the water which undermines the canal banks. The benefit to the shipping public which would result from a more expeditious canal service can not be estimated.

86. In a railroad disaster in the tunnel of the New York Central Railroad great destruction of property and loss of life ensued from the explosion of the Pintsch gas reservoirs. The use of gas is therefore shown to be as dangerous as the car stove, and the discovery of some illuminating means that will not tend to fire the same in the event of accident will prove to be a valuable invention.

87. There is great demand in eyeglasses for some means of practically securing the extremities of the nose-spring, the nose-pad arms and the posts secured to the lenses which will resist accidental loosening and annoying movement of the lenses. Many attempts have been made to successfully arrive at this result, but they are all more or less disadvantageous, and the means heretofore used have been either cumbersome or weaken the strength of the parts which they engage. Every one seems to have followed the old plan in the use of a screw, and if some one should devise a simple and positive means for securing the parts of an eyeglass without the use of screws, and without detracting in the least from the strength of said parts, immediate adoption of such device would follow.

88. Another promising field is that of single-rail railways, commonly known as "mono railways." There is room for great improvements in this class of inventions, both in the structure of the railway itself and in cars adapted thereto. Recent European experiments in mono railways have demonstrated the wonderful advantages of single-rail track, both in speed and safety; and the near future may witness the practical development of this class of invention.

89. Prairie fires. This subject offers an opportunity for inventors to devise a machine for moving over the ground surface similar to a horse rake or cultivator, having means for burning the grass down to the ground for a space of about 8 or 10 feet in width, using gasoline to ignite the grass, and a train of steel brushes or other devices to extinguish the flame before it is permitted to spread, thus creating a fire guard.

90. No practical device has been discovered that will utilize the power of the waves and the tides. The main obstacle to success in getting the ocean into harness has been to provide a motor that would withstand a heavy surf. The latest attempt in this line proposes a series of submerged pistons worked on buoys, whose constant motion is expected to compress air.

91. Incandescent gas lighting approaches perfection in house illumination, and is now generally used. A serious drawback to this system of lighting, however, is the fragile and perishable character of the mantles employed. What is needed is a mantle which will not break in ordinary handling, or if accidentally dropped a distance of a few feet. Also one which will not melt or crack when exposed to the temperature of burning coal gas, and which will not become useless if bent out of its original shape.

92. Women are always on the outlook for curling tongs or irons, hair curling devices generally, and other mechanical articles for the toilet. New ideas in corset, placket, glove, shoe and hat fasteners command a ready sale. Simple attachments for belts which prevent sagging and displacement, and novelties in pocketbooks, cravat and necktie holders are very much sought after.

93. Novel and sensational advertising devices, especially for store window displays, find ready sale.

94. Means for protecting shores which will prevent the undermining of buildings situated on the beach. Every year thousands of dollars are lost by reason of the breaking of the buttresses or breakwater, caused by high waters, which removes the foundation of buildings, and causes the collapse and entire loss of the same.

95. A prolific field for the inventor is offered in the line of sub-marine vessels. Already the British and French Governments are building a number of vessels of this class. The patent rights in all countries, excepting the United States, for the Holland sub-marine boat, have been acquired by the Vicker & Maxim Company; and commercial activity in this line of invention has already begun.

96. A paste composition for friction matches, free from phosphorous, would revolutionize the manufacture of matches. The composition should offer such resistance to shocks and friction as to prevent apprehension of danger from explosions during the process of manufacture. It should also be free from chemical ingredients injurious to the health of those employed in the manufacture of matches.

97. An alloy for armor plate, and a process and apparatus for making the same. The question of obtaining armor plates for forts and war vessels which shall be able to withstand the heavy projectiles which are now used is occupying the attention of all the principal nations of the world, and any improvement in this class of inventions would be readily adopted.

98. For years various inventors have been attempting to secure a substitute for the razor. Recently a Frenchman thought he had solved the problem, but after his device and an electro-chemical combination had been used in the barber shop a few days, the customers discovered that the instrument burned and blackened their chins and the inventor was obliged to flee before their rage. Nevertheless there is a fortune for the inventor who discovers a harmless substitute for shaving.

99. Novel devices or structures, on the order of merry go-rounds, toboggan slides and the Ferris wheel, for use at summer resorts, fairs and expositions, are always in demand, and, as a rule, are very profitable. The most recent inventions in this line are the centrifugal railway, in which a car describes a circle, and is maintained on the rails by centrifugal force; the "aquarama," or voyage on the rivers of the world; and the "hotel topsy turvy," in which everything appears to be reversed, or upside down.

100. Novelties in culinary utensils, or labor-saving devices for the household like egg beaters, vegetable parers, can openers, coffee pots, window or floor cleaners, tack pullers, carpet stretchers, sweepers, cleaners and beaters, dusters, polishers, cabinets, and flour and ash sifters, are always salable.



THE UNITED STATES CAPITOL BUILDING

101. A simple device for tightening woven wire bed springs. Any one who has used these kind of bed springs knows that in a short time the wire stretches or springs, causing a sagging in certain parts of the bed. A device which will provide means for overcoming this objection is very much desired.

102. A druggists' prescription file which will enable prescriptions to be compactly filed away in regular order, kept clean, and at the same time rendered quickly accessible for several years back, so that any desired prescription may be readily found, removed and replaced without disturbing others.

103. A practical machine for scaling fish is also an invention which ought to prove successful, as this work is now done altogether by hand. In large establishments for the handling and canning of fish some rapid and labor-saving means for removing the scales or cleaning fish are demanded.

104. A wash basin having means for closing and opening the discharge therein without the necessity of inserting the hand into the water contained in the basin. Some simple device which will take the place of the ordinary plug and chain, and will add little or nothing to the expense, is what is desired.

105. Owing to the destruction of forests, and the growing scarcity of wooden ties, a demand has arisen for a substitute. Metal ties have been used for some time on European railways. It would seem that some kind of a hollow steel tie, filled with cement or some other practical construction, would fill the need.

106. One of the things which the average street railway manager is in search of is a satisfactory convertible car, which will save him the necessity of doubling his equipments and of providing storage room for the closed cars in summer and the open cars in winter. Experiments should be along the line of convenient disposition of the seats and the replacement of the ordinary side curtains which are of very little protection in wet weather. Some simple means of temporarily collapsing or throwing out of use of window sections so that they may be readily drawn into operative position will be a step in the direction of solving the problem.

107. Any one who can invent a process which will save half a cent a ton on the present system of loading coal into ocean steamers should be able to sell his invention for a very large sum. Among the great needs of the Navy is some easier method of coaling ships at sea from colliers, especially when the sea is rough. A method that would accomplish this result with more ease than it is now accomplished, would do as much to improve the efficiency of a fleet of battleships as would an improvement in the making of armor or the invention of a more efficient gun than is now known.

108. Liquid blacking is much more convenient to apply to boots or shoes than the solid blacking or paste, but most of the devices for handling it hitherto produced are not easy to manipulate, the common practice being to apply the liquid with a sponge attached to a wire inserted in the cork of the bottle. Attempts have been made to arrive at a successful use of liquid blacking in connection with a brush, but like most original inventions this class is subject to a wide range of improvement and affords an opportunity for an inventive mind to produce a simple and effective brush construction for applying liquid blacking.

109. Any improvement tending to the amelioration of the condition of those who delve in the bowels of the earth for their bread would be a boon to humanity. The prevention of explosions from fire damp, and the purification of the unwholesome atmosphere of the mines are subjects worthy of the attention of the thinker and inventor, not only from the humane standpoint, but also from a business point of view. Mine owners are quick to adopt practical ideas looking to the comfort or safety of their operatives, or adapted to facilitate the work of mining.

110. A mechanical device or machine for plucking feathers from fowls would form a commercially valuable invention if constructed to operate efficiently and practically. Such a machine should comprise means for completely removing the feathers, and ejecting the fowl from the machine thoroughly picked and ready for dressing.

111. A device by means of which a hat, coat or umbrella may be hung up with security from thieves is something which has not yet been successfully developed. An effective and comparatively simple invention in this line would be one of value, and one which would be readily adopted. Security is the prime consideration, but expense and ease of manipulation are factors not to be ignored.

112. One of the most profitable fields of invention at the present time is a smoke consumer for stoves and furnaces. If one knows the composition of smoke and understands that it is merely unconsumed flakes of carbon floating in non-combustible gases he need not be a chemist to see that smoke abatement is merely a question of fuel. If soft coal was perfectly consumed the gases that escape through the chimney would be colorless; that is, there would be no carbon or soot in them and hence no smoke. It is obvious that this line of invention lays open a valuable territory and encourages inventors to experiment and to cover by patent every field relating to improvements in stoves and furnaces with this end in view.

113. Notwithstanding the wonderful development of improvements in railway construction and equipment during the past quarter of a century, this field of invention is still an attractive one for the inventor. With respect to the locomotives, economy in fuel is an important consideration, and inventions looking to the consumption of the products of combustion, and the arresting of sparks and cinders are in demand. Improvements which increase the safety of trains are also of value, and if practical can be readily placed. In connection with railway inventions, it may be suggested that apparatus for weighing the cars of a train with reasonable accuracy while moving either separately or loosely coupled, is something which railway companies need, and would doubtless promptly adopt. Car heating and ventilation, devices for improving the road bed and track structures, are all subjects to which the inventor can profitably direct his ingenuity.

114. A reliable automatic gas governor, which may be attached to a meter for regulating the flow of gas through the meter, and preventing the waste thereof. Most of the devices of this kind now on the market are unsatisfactory, because they require constant attention and become inoperative after having been in use a short time. A simple, inexpensive and effective gas governor would meet with a ready sale.

115. To penetrate the fog at sea has always been and still is a problem, and a fortune awaits the solver of this problem. Audible signals, such as alarm whistles, have been insufficient, and a new idea must be evolved in which the

audible signal will be eliminated or combined with other safeguards. While no specific suggestion can be offered, it is probable that electricity will play an important part in the successful working out of this important matter.

116. There is an actual demand for a simple, inexpensive voting device, adapted for the use of legislative bodies. The adoption of such an invention by the Congress of the United States has been agitated for some time, and has probably only been delayed by the non-appearance of a voting machine or system answering the requirements as to simplicity, accuracy and expense. It requires about forty-five minutes to call the roll in the House of Representatives, and the time and expense thus involved in the course of a session can readily be estimated. The inventor who solves this problem will be amply rewarded.

117. To scrape a ship's bottom without the delay and expense of dry-docking presents a problem to inventors, the solution of which will mean profit to the originator and a revolution in marine repairs. The fouling of ships by barnacles and sea waste is a source of constant concern to navigators, and the expense of dry-docking is an important item. To free ships from the incubus of the sea has always been a thing desired, and sooner or later a practical method of accomplishing this while the vessel is afloat may be devised.

118. Wheels, axles, bridges and rails have all been strengthened to carry their increased loads; but, strange to say, the splices which hold in place the ends of the rails, and which are really short-span bridges, are now the weakest part of a railway. The angle-bar splice has but one-third of the strength of the rail, and its strength cannot be increased, owing to its want of depth. Joints go down under every passing wheel, and the ends of the rails wear out long before the rest.

119. The electrical storage battery is the generator of the immediate future. The brush battery employs lead plates which necessarily require a considerable generation for their own transportation. The weight of the battery is its barrier to commercial success. The new Edison battery, which is the most recent improvement in this line, substitutes thin steel plates for lead, and the plates are perforated to receive cells containing compressed parcels of mixed iron and graphite for the positive electrode, and nickel and graphite for the negative electrode. The electrolytic fluid is a solution of potash, which does not affect the containing vessel and preserves its quality. It is claimed for the battery, as a result of prolonged and severe tests, that it will render two or three times as much service as the same weight of the ordinary lead battery.

120. During the past few years a new field has been opened for inventors. To produce realistic stage effects, mechanism is required, and a number of patents have been recently granted in this line of invention. Examples of these are the patents of Neill Burgess on mechanism for producing the horse race in the "County Fair," and the apparatus employed in the play of "Ben Hur" for the illustration of the chariot race. Any invention of merit in this line will be readily adopted, and perhaps no class of patented devices is more profitable.

121. This field has been extensively exploited, but new toys are always in demand. Simplicity is to be kept in view in toys, as the cost of manufacture is an item of first importance. However, in the line of electrically-operated toys which convey an elementary knowledge of electricity the cost is of secondary consideration, novelty and originality being the essentials. In Germany the manufacture of toys is an important industry, and it is also an item of importance in this country. As expensive plants are ordinarily not required for the manufacture of toys, patents in this line are easily marketed.



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122. A fortune awaits the man who will invent a good substitute for leather. Nobody has yet succeeded in approaching it, unless it be an inventor who has patented a fabric, which he proposes to use, in particular, as a material for the inner soles of shoes and boots, though it may be employed for other purposes. It resembles what is known as split sole-leather, but is much cheaper, and claims to be superior, being waterproof, as well as stronger. The manufacturer of this imitation leather uses the fine sole-leather dust given off by the buffing rolls used upon sole-leather. Hitherto this dust has been a waste product, but the new invention combines it with gum and employs it in this shape to form a coating on one or both sides of canvas or other similar fabric. As it dries, a sprinkling of dry leather dust is added, and the fabric thus treated is passed between rollers, so as to cause the leather dust to be firmly imbedded in the fabric and combined with it.

123. Inventors keep pace with the times, and encourage new "fads." This is demonstrated by the large number of patents recently granted on golf sticks and paraphernalia used in the game of golf. The latest diversion in men's apparel is the shirt waist, and this demands a substitute for suspenders. The belt has been universally adopted for summer wear by men, but it falls short both in appearance and comfort. The lucky inventor who devises a satisfactory substitute for suspenders will reap a rich harvest.

124. The greatest inventions are not necessarily the most profitable. Small articles which may be cheaply made, and sold at a small price, are usually the most ready producers of profit. The public demands novelties, and the inventor must supply them. It may be a difficult matter to find a manufacturer and capitalist to promote a complicated machine, however meritorious, but comparatively easy to place a patent for a simple novelty which may be manufactured at little expense. ●

125. A successful scheme for paving alongside street car tracks is needed. Repairs to the paving next the rails is one of the largest items of maintenance of way. The vibration due to the speed of the heavy cars shatters the edges of the pavement and the rain and weather do the rest.

126. Tables have been invented for ocean steamers that purport to maintain an equilibrium of the articles contained thereon. These have generally been constructed to swing or sway, but the movements have been so abrupt that they are not practical for the purpose, and the way is open for some one to devise a simple table of this character having an easy movement without jar or vibration.

127. An apparatus for aerial navigation. Great strides have been made in this art recently, and a number of partially successful devices have been invented. There is still room for improvement, however, and the value for war purposes of some machine which may be propelled through the air cannot be overestimated. The Patent Office will not grant patents in this class unless the machines are provided with balloon or similar attachments, unless a working model is furnished. M. Santos-Dumont recently won the prize of \$20,000 offered for the discovery of a dirigible balloon, by circling the Eiffel Tower, in Paris, with his air ship. He flew high, low, in straight lines, and curves, with the wind against him, precisely as he willed. He proved himself master of the air as truly as the navigator of a steamship is master of the waves.

128. Government officials are studying constantly to devise rapid means for transporting the mail for the convenience of the public. A system by which letters, instead of being dropped into stationary boxes, can be placed in receptacles and carried by electricity or pneumatic power to the post office should solve the problem.

129. Dispatching or block signaling on electric railroads is, strange to say, considerably behind the perfection reached on steam railroads, and questions connected with signaling or controlling the traffic at meeting points are among the most serious now engaging the attention of the managers of the inter-urban lines. There are two general ways of dealing with this problem, first by telegraphic dispatching, and second by electric block signals, automatic or otherwise. The possibility of using the tracks for signaling purpose on steam roads gives an immense advantage over electric roads in automatic signaling. The block system used on some electric railroads is not practically feasible by reason of the necessity of rail insulation in ground structures. On lines with dirt ballast and where one rail of the track cannot be spared from the return circuit for the purpose of signaling, this plan is not available. The discovery of a simple and practical signaling device or mechanism for electric railroads will prove a source of material income to the successful inventor.

130. In connection with sea travel, another avenue to wealth is open to inventors, for second only in importance to preventing collisions and accidents at sea is the loss of life which results from such accidents. While life boats of various construction and of more or less merit are now carried as part of the equipment of sea-going vessels, perfection in this line has by no means been reached, and there is an absolute demand for meritorious and practical improvements in this line. Any invention which will add to the present safeguards for ocean travelers should be successful financially, as well as a contribution to the cause of humanity.

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